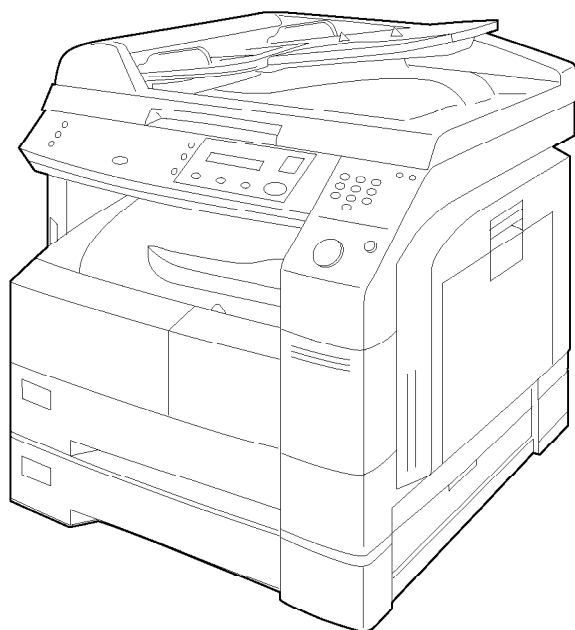


# Service Manual

Digital Imaging Systems


**DP-1510P / 1810P /  
1810F / 2010E**



## **WARNING**

This service information is designed for experienced repair technicians only and is not intended for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt within this service information by anyone else could result in serious injury or death.

## **IMPORTANT SAFETY NOTICE**

There are special components used in this equipment which are important for safety. These parts are marked by  in the Schematic Diagrams, Circuit Board Diagrams, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire or other hazards. Do not modify the original design without permission of manufacturer.

# Panasonic®

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# 1 Specifications Table

**Note:**

DP-1510P/2010E model is limited to certain destinations only.

## 1.1. Copy Function

Items		Description				Remarks
		DP-1510P	DP-1810P	DP-1810F	DP-2010E	
Basic Specifications						
1 Type		Desktop				
2 Platen		Fixed				
3 Original Position		Left / Inner				
4 Recording Paper Path		Center				
5 Face Up / Face Down		Face Down				
6 Drum		Organic Photo Conductor (OPC)				
7 Copy Process		Dry Electrostatic System				
8 Developing Process		Magnetic Mono Component Development System				
9 Toner Recycle		No				
10 Fusing System		Heat & Pressure				
11 Max Original Size		Ledger (11 x 17 in) / A3 (297 x 420 mm)				
12 Paper Size						
	Paper Tray	LDR, LGL, LTR, LTR-R, INV-R				For USA and Canada
		A3, B4, A4, A4-R, A5-R, FLS				For EU
		A3, B4, A4, A4-R, B5, B5-R				For Other Destinations
	Sheet Bypass	LDR, LGL, LTR, LTR-R, INV-R				For USA and Canada
		A3, B4, A4, A4-R, A5-R, FLS				For EU
		A3, B4, A4, A4-R, B5, B5-R				For Other Destinations
	Sheet Bypass Envelope	No				
13 Warm-up Time		Approx. 30 sec.				68 °F (20 °C)
14 First Copy Time		6.5 sec.				From Platen/ Letter/ A4 Portrait/ 1st Paper Tray. Period between Start Key is pressed and Paper exit.
15 Copy Speed						
	Ledger / A3	10 cpm				
	Legal / B4, FLS	11 cpm				
	Letter-R / A4-R	13 cpm				
	LTR / A4	15 cpm	18 cpm	20 cpm		
	Invoice / A5	15 cpm	18 cpm	20 cpm		
16 Zoom						
	Enlargement	Selected Original Size / Copy Size				
	Reduction	Selected Original Size / Copy Size				
	Zoom	50 - 200%				1% Step
	X-Y Zoom	No				

Items		Description				Remarks	
		DP-1510P	DP-1810P	DP-1810F	DP-2010E		
17 Paper Feed		Front Loading Universal Paper Tray					
	Paper Tray						
	Capacity		550 sheets x 1 (DP-2010E-PU: 550 sheets x 2)				LTR / A4 : 20 lb (75 g/m <sup>2</sup> )
	Auto Size Setting		No (Input from Control Panel)				
	Low Paper Warning		Empty Only				
	Sheet Bypass						
	Capacity		50 sheets				LTR / A4 : 20 lb (75 g/m <sup>2</sup> )
	Auto Size Setting		Yes				
	Paper Capacity (Std. Configuration)		600 sheets				Paper Tray + Sheet Bypass
	18 Multi Copy Range		1 - 999 sets				
19 Gradation							
	Text		2-steps				
	Text / Photo		2-steps Error Diffusion				
	Photo		256-steps				
20 Resolution		600 dpi				Scanning and Printing.	
21	Standard Sorting Memory Size		No	8 MB			
22	Standard Page Memory Size		16 MB				
23 Exit Tray Capacity		Standard: 250 sheets					
24 Color		No					
25 Max Power Consumption		Less than 1.2 kW					
26 Dimensions							
	(W x D x H)	23.1 x 23.8 x 16.1 in (588 x 605 x 410 mm)			23.1 x 23.8 x 20.7 in (588 x 605 x 526 mm)	H: To Platen Glass.  For USA and Canada	
		23.1 x 23.8 x 16.1 in (588 x 605 x 410 mm)				For Other Destinations	
	(W x D x H)	23.1 x 23.8 x 18.0 in (588 x 605 x 458 mm)		23.1 x 23.8 x 20.6 in (588 x 605 x 522 mm)	23.1 x 23.8 x 22.6 in (588 x 605 x 573 mm)	H: Up to i-ADF.  For USA and Canada	
		23.1 x 23.8 x 18.0 in (588 x 605 x 458 mm)			23.1 x 23.8 x 20.6 in (588 x 605 x 522 mm)	For Other Destinations	
27 Projection Area		Less than 3.85 ft / 0.358 m					
28 Occupancy Area							
	(W x D)	33.8 x 23.8 in (858 x 605 mm)				Includes Sheet Bypass.	

Items		Description				Remarks
		DP-1510P	DP-1810P	DP-1810F	DP-2010E	
29	Weight	91 lb (41 kg)		99 lb (45 kg)	113 lb (51kg)	Main Unit only. For USA and Canada
		91 lb (41 kg)		99 lb (45 kg)	93 lb (42 kg)	For Other Destinations
Options						
1	Paper Feed System	Max. 550 sheets x 2		Max. 550 sheets x 4		
	550 sheets 2nd/4th Paper Feed Module	Yes*		Yes		Motor is Not Mounted. *2nd Only
	550 sheets 3rd Paper Feed Module	No		Yes		
	Paper Size Detection	Manual (Control Panel)				
	Low Paper Warning	Empty Only				
	Max. Paper Capacity	1,150 sheets		2,250 sheets		LTR / A4 : 20 lb (75 g/m <sup>2</sup> )
2	Cabinet					
	Stand for 2-Paper Tray Configuration	Option				Depends on the Local Sales Company.
	Stand for 1-Paper Tray Configuration	Option				
3	Platen Cover	Yes		No	Yes	
	Free Stop	Yes		-	Yes	From 30 to 70 degrees.
4	ADF					
	Single Side Type	Yes		Standard	Yes	
	Original Set	Face Up				
	Scanning Method	Sheet Through				
	Capacity (Original)	50 sheets				LTR / A4 : 20 lb (75 g/m <sup>2</sup> )
	SADF Mode	No				
	Free Stop	Yes				From 30 to 70 degrees.
5	Inverting ADF (i-ADF)					
	Duplex Type	No			Yes	
	Original Set	-			Face Up	
	Scanning Method	-			Sheet Through	
	Capacity (Original)	-			50 sheets	LTR / A4 : 20 lb (75 g/m <sup>2</sup> )
	SADF Mode	-			No	
	Free Stop	-			Yes	From 30 to 70 degrees.
6	Exit Tray (Inner)	Yes				
	Tray Position	Inner				
	Number	1				
	Face Up / Face Down	Face Down				
	Bin Capacity	250 sheets				
	Multi Tray Function	No				
	Shift Tray Function	No				
7	Finisher	No				
8	Exit Tray (Outer)	No				
9	Dual-Path Exit Guide Unit	No				

Items		Description				Remarks
		DP-1510P	DP-1810P	DP-1810F	DP-2010E	
10 Paper Transport Unit		No				
11 Automatic Duplex Unit		No			Yes	
12 Counter						
	Key Counter Capability	No				Only the Harness Kit is supplied as an option kit.
13 Dehumidifier		Option				Supplied as a Service Part.
14 Electronic Sorting Board		No	Standard (8 MB)			For DP-1810P: CODEC + 8MB memory
	Optional Image Memory 1 (8 MB)	Yes				Only one of two available types can be installed.
	Optional Image Memory 2 (16 MB)	Yes				
	Optional Image Memory 3 (64 MB)	Yes				
	Optional Image Memory 4 (128 MB)	Yes				
Features						
1 Automatic Features						
	Auto Magnification Selection	No (ADF: Yes)				
	Auto Paper Selection	No (ADF: Yes)				
	Auto Density Control	Yes				
	Auto Paper Tray Selection	Yes				
	Auto Start	Yes				Reservation while Power On Initial.
	Energy Saver Mode					
	Standby Mode	Yes				
	Energy Saver Mode	Yes				
	Sleep Mode	Yes				Turns Off the Heater Power.
	Power Consumption During Sleep Mode	Approx. 1.5 wh				100 VAC Power Supply
		Approx. 2.2 wh				200 VAC Power Supply
	Remote Diagnostic	No				
	Machine Stop While Out of Toner	Yes (PPC Function)				
2 Additional Features						
	Low Paper Warning	Empty Only				
	Photo Mode	Yes				256 steps, Multi-level
	Original Detection Release	No				
	Edit / Effects					
	Book Mode	Yes				
	Edge Mode	Yes				
	Margin Mode	Yes				
	Page Numbering	No				
	Inverse Mode (Negative / Positive)	No				

Items		Description				Remarks
		DP-1510P	DP-1810P	DP-1810F	DP-2010E	
	Centering Mode	No				
	Mirror Mode	No				
	Image Overlay Mode	No				
	Others (Inverting ADF & ADU)	No			Yes	
	2-Page Copy Mode	Yes				LDR → LTR x 2 (A3 → A4 x 2, B4 → B5 x 2)
	2 in 1	Yes				
	1→2	No				
	4 in 1	No				
	1→4	No				
	Booklet Mode	No				Copy from 4 single-sided pages to 1 booklet mode sheet.
	Duplex Copy					
	1→2	No			Yes	With i-ADF option.
	2→1	No			Yes*	
	2→2	No			Yes*	
	Book→2					
	Book Format	No			Yes*	
	Facing Pages	No			Yes*	
	Image Rotation (90 Degrees)	Yes				
	Electronic Sorting	No	Yes			
	Rotation Sorting	No	Yes*			Sheet Bypass or Optional Tray.
	Insertion Job					
	Cover Mode	No				
	Page Insertion Mode	No				
	OHP Interleave Mode	No				
	Presentation Mode	No				
	Department Counter	Yes				50 Departments
	ADF (Optional)					
	Multi Size Feed	No				
	SADF Mode	No				
Original Counter	No					
Job Memory	Yes (2)					
Job Time Display	No					
Concurrent Copy	Yes*				Can Reserve when printing PC data. Can NOT Reserve next copy while printing Copy data.	
Function Mode	Yes					
Interrupt	Yes					
Electrical Counter	Yes					
Skyshot Mode	Yes					

Items		Description				Remarks
		DP-1510P	DP-1810P	DP-1810F	DP-2010E	
	Check / Slip Mode	No				
	Copy Account Display Mode	No				
3 Control Panel						
	Display	20 x 2 Alphanumeric LCD				
	Status Lamp	No		Yes	No	
	Key					
	Original Size	Yes				
	Copy Size	Yes				
	Keypad	Yes				
	Clear	Yes				
	Stop	Yes				
	Start	Yes				
	Energy Saver	Yes				
	Multi Size Feed	No				Same widths only.
	Sort	No		Yes		
	Finish	No				
	Function	Yes				
	Original Detection Release	No				
	Interrupt	Yes				
	Reset	Yes				
	One-Touch Key	No		Yes	No	
	Mode Change	Yes				
LCD Main Indication						
	Message Language (Default)	English				For USA and Canada
		Specified Language				For EU and Other Destinations
	Message Languages Available	3 - 4				
	Original Size / Image Indication	Yes (Without Image)				
	Paper Size / Image Indication	Yes (Without Image)				
	Paper Tray Selection	Yes				
	Selected Paper Tray / Tray Status	Yes				
	Original Mode Selection	No (LED Indication only)				Text / Text-Photo / Photo
	Copy Density Selection	No (LED Indication only)				5 Steps
	Setting Confirmation	No				
	Zoom Magnification	Yes				
	Function Classification	No				
	Number of Copies	Yes				
	SADF / Multi Size Feed Mode	No				



Items		Description				Remarks
		DP-1510P	DP-1810P	DP-1810F	DP-2010E	
	Error Code	Yes				
	Finishing	No				
	Warning Indicators					
	Add Toner	No (LED Indication only)				
	Toner Waste Container Full	Yes				
	Add Paper (No Paper)	No (LED Indication only)				
	Add Paper	Yes				
	Paper Jam Indication	No (LED Indication only)				
	Paper Jam Location	No (LED Indication only)				
	Service Alert Call	Yes				
	User Error	Yes				
	Machine Error	Yes				
	History of Jam Errors	No				
	Number of Jam Errors History	No				
4 Main Unit						
	Total Counter	No				Electrical Counter
	Max. Weight of Documents on the Platen Glass	11 lb (5 kg)				
	ADF with Document Guide	Option		Standard	Option	
	Clip Pocket	No				
	Operating Instructions Pocket	No				
	Warning / Caution Label	Specified Language				
5 Optical System						
	Original Detection Method	No				
	Original Detection Size	LDR, LGL, LTR, LTR-R, INV, INV-R				For USA and Canada
		A3, B4 (FLS), A4, A4-R, A5, A5-R				For EU, Other Destinations
	Scanning Method	600 dpi CCD				
	Dehumidifier	No				Supplied as a Service Part
	Mechanical Multi Copy Mode	No				
6 Process System						
	Type	Separate OPC Unit / Toner Unit Type				
	Toner					
	Toner Yield	10,000 Pages / Toner Bottle				LTR / A4 6% Image
	Low Toner Level Sensor	Yes				
	Drum Life	45,000 Pages				Printing 2 pages interval

Items		Description				Remarks	
		DP-1510P	DP-1810P	DP-1810F	DP-2010E		
	Developer Life	N/A					
	Toner Waste Container	Yes					
	Dehumidifier	Yes				Supplied as a Service Part	
	Manual Add Toner	No				Toner Bottle replacement	
7 Feeder System							
	Paper Tray (Standard / Option)						
		Paper Size Setting Method	Universal & Fixed by Screw				
		Change Paper Size Method	Set by Control Panel				
	Setting Size	LDR, LGL, LTR, LTR-R, INV-R				For USA and Canada	
		A3, B4, A4, A4-R, A5-R, 8 x 13 in, 8.5 x 13 in				For EU	
		A3, B4, A4, A4-R, B5, B5-R				For Other Destinations	
	Capacity	550 sheets				LTR / A4 : 20 lb (75 g/m <sup>2</sup> )	
	Low Paper Warning	Empty Only					
	Sheet Bypass						
		Capacity	50 sheets				LTR / A4 : 20 lb (75 g/m <sup>2</sup> )
		Paper Size Setting Method	Universal				
		Change Paper Size Method	Auto				
		Paper Size Detection	LDR, LGL, LTR, LTR-R, INV-R				For USA and Canada
	A3, B4, A4, A4-R, A5-R, 8 x 13 in, 8.5 x 13 in				For EU		
	A3, B4, A4, A4-R, B5, B5-R				For Other Destinations		
Efficiency							
1 Productivity							
	Warm-Up Time from Stand-by		Approx. 30 sec.				68 °F (20 °C)
	ADF Productivity (LTR / A4)						
		ADF	100%				
		Inverting ADF	-			100%	
	ADU Copy Productivity (LTR / A4)		-				
		Transport Method	-			Stackless	
		1→2					
		1 copy	-			50%	
			-			72%	
			-			80%	
	2→2						
		1 copy	-			45%	
			-			70%	
			-			78%	

Items		Description				Remarks
		DP-1510P	DP-1810P	DP-1810F	DP-2010E	
PM Cycle						
1	Major PM	120 k				
2	Minor PM (Cleaning)	60 k				
Packing Configuration						
1	Packing Dimension	28.9 x 30.1 x 23.4 in (735 x 765 x 595 mm)	28.9 x 30.1 x 25.6 in (735 x 765 x 650 mm)	28.9 x 30.1 x 31.9 in (735 x 765 x 810 mm)	Main Unit only.  For USA and Canada	
		28.9 x 30.1 x 23.4 in (735 x 765 x 595 mm)	28.9 x 30.1 x 25.6 in (735 x 765 x 650 mm)	28.9 x 30.1 x 23.4 in (735 x 765 x 595 mm)	For Other Destinations	
2	Packing Weight	103.6 lb (47 kg)	112.4 lb (51 kg)	132.3 lb (60 kg)	Main Unit only. For USA and Canada	
		103.6 lb (47 kg)	112.4 lb (51 kg)	105.8 lb (48 kg)	For Other Destinations	
3	Accessories					
	OPC Unit	Yes				
	Toner Hopper Unit	No				
	Operating Instructions	Yes				
Power Supply						
1	Power Requirement	99 - 138 VAC, 47 - 63 Hz Single Phase				100 VAC Power Supply
		180 - 264 VAC, 47 - 63 Hz Single Phase				220 VAC Power Supply
2	Power Consumption	Less than 1.2 kW				
Ambient Conditions						
1	Temperature	50 - 86 °F (10 - 30 °C)				
2	Relative Humidity	30 - 80%				
3	Safety	UL1950 / CSA C22.2 No. 950				For USA and Canada
		EN60950				For EU and Other Destinations
4	Energy Saver	Energy Star Compliant				
5	EMI	Class A Computing Device in FCC Rules Part 15				

## 1.2. Fax, Printer and Internet Fax Functions

### 1.2.1. Fax Function

**Note:**

DP-1810F model only.

Items		Description	Remarks
		DP-1810F	
Main Specifications			
1	Compatibility	G3	ITU-T Std & Non-Std (MGCS)
2	PSTN Line Port	Yes (1)	
3	Leased Line Port	No	
4	V.24 Line Port	No	
5	Modem Speed	33.6 - 2.4kbps	
6	Coding Scheme	JBIG/MMR/MR/MH	
7	ECM	Yes	Conforms to ITU-T
8	Short Protocol	Yes (B, D)	
9	Transmission Speed	Approx. 3 sec.	ITU-T Image No. 1 (A4, Std Resolution)
10	Communication Resolution (pels/mm x lines/mm)	<b>Transmission</b> Std        8 x 3.85 Fine       8 x 7.7 S-Fine     8 x 15.4 16 x 15.4 <b>Reception</b> Std        8 x 3.85 Fine       8 x 7.7 S-Fine     8 x 15.4 16 x 15.4	
Scanner Mechanism			
1	Scanning Device	CCD (ADF / Platen)	
2	Scanning Speed		
3	S-Fine     :F16 x 15.4	Less than 2.0 sec.	A4 vertical direction
		Less than 1.4 sec.	A4 horizontal direction
4	Fine        :F8 x 7.7	Less than 1.0 sec.	A4 vertical direction
		Less than 0.7 sec.	A4 horizontal direction
5	Std         :F8 x 3.85	Less than 1.0 sec.	A4 vertical direction
		Less than 0.7 sec.	A4 horizontal direction
6	Scanning Resolution (pel/mm x lines/mm)	Std        8 x 3.85 Fine       8 x 7.7 S-Fine     8 x 15.4 16 x 15.4	
7	Document Size (Max.)	ADF: Max. A3	
8	Effective Scanning Width	LDR (11.5") / A3 (292 mm)	
9	A3 size TX/RX	Yes	Conforms to ITU-T A3
10	Reduction XMT	Yes	A3 to B4 / A3 to A4 / B4 to A4
11	ADF Capacity	50 sheets	Face-Up, feed from top page LTR / A4 (17 lb / 64 g/m2)
12	Collation Stack	Yes (Face Down)	

Items		Description	Remarks
		DP-1810F	
Printer Mechanism			
1	Recording Method	LP	
2	Recording Speed	18 ppm (A4 horizontal)	
3	Recording Resolution Fax	406 x 391 dpi	
4	Recording Paper Size	Ledger / Legal / Letter / A3 / B4 / A4 / A5 / INV-R	Ledger size is transmitted as A3 size for N. American model. If A3 is received, approx. 1" of image on both edges are not printed on Ledger size paper.
5	Effective Printing Width	11.4" (289 mm)	Conforms to ITU-T A3
6	Recording Paper Capacity	550 sheets	Optional max. 2200 sheets LTR / A4 : 20 lb (75 g/m2)
7	Collation Stack	Yes (Face Down)	
8	Consumable	Toner Cartridge / OPC Drum	
Fax Memory			
1	Standard Memory	2 MB (120 pages)	Flash ROM, ITU-T Image No.1 (A4, Std Resolution)
2	ITU-T #1/standard result		
3	Optional Memory	2 MB, 4 MB, 8 MB	
Dual Operation			
1	Multi Task Operation	Yes	
2	Direct XMT Reserve	Yes	
3	Memory XMT Reserve	Yes	
4	Number of Memory Job Files	Yes (Max. 50 files)	
Dialing/Telephone Features			
1	Auto Dialers	160	
2	Phone Book Directory Search Dialing	Yes	
3	Total Auto Dialers	160	
4	Program Dials	8	
5	Max. Tel Number Digits	36	
6	Max. Station Name Characters	15	
7	Full Number Dialing (Buffered Dialing)	Yes	Max.30 stations
8	Direct Dialing (Monitor Dialing)	Yes	Voice mode
9	Automatic Redialing	Yes	
10	Manual Redialing	Yes	
11	Line Monitor Speaker	Yes	
12	Chain Dialing (Hybrid Dial)	Yes	In Monitor Dialing mode only
13	Pulse / Tone Dialing	Yes	10 pps / DTMF

Items	Description	Remarks
	DP-1810F	
14 Pulse to Tone Change	Yes	
15 Flash Key	Yes	
16 Handset	Option	
<b>Transmission Features</b>		
1 Direct Transmission	Yes	
2 Memory Transmission	Yes	Page Retransmission
3 Quick Memory Transmission	Yes	
4 Multi-Station Transmission (Sequential Broadcasting)	Yes	Max. 190 stations
5 Direct Deferred Transmission	No	ADF Deferred Transmission
6 Deferred Transmission	Yes	Max. 50 timers
7 Deferred Multi-Station Transmission	Yes	
8 Priority Direct Transmission	Yes	Priority ADF Transmission
9 Priority Memory Transmission	No	
10 Batch Transmission	Yes	Real Time (up to 5 Files)
11 90 Degree Rotation Transmission	Yes	
12 Cover Sheet	No	
13 Confidential Mail Box	Yes	20 Mailboxes
14 Multi-Copy Transmission	No	
15 Memory Back-Up	Yes	FAX : Back-up with Flash Memory. Copy / Printer : No Back-up with D-RAM
16 Duplex Scanning	No	
<b>Reception Features</b>		
1 Substitute Reception	Yes	
2 Fixed Reduction	Yes	LTR/A4/LGL: 70 - 100% (in 1% Steps), Top & Left Alignment
3 Auto Reduction	Yes	LTR/A4/LGL: 70 - 100% (in 1% Steps), Top & Left Alignment
4 Overlap Printing	Yes	Page End Approx. 0.51 in (13 mm)
5 Receive to Memory	Yes	
6 Distinctive Ring Detector (DRD)	Yes	
7 90 Degree Rotation Reception	Yes	
8 Duplex Printing	No	

Items	Description	Remarks
	DP-1810F	
Polling		
1 Polling	Yes	
2 Turnaround Polling	No	
3 Multi-Station Polling	Yes	Max. 190 stations
4 Deferred Polling	Yes	Max. 50 timers
5 Deferred Multi-Station Polling	Yes	Max. 50 timers / 190 stations
6 Direct Polling Tx	No	
7 Memory Polling Tx	Yes	1 File
8 Preset Polling Password	Yes	
9 Temporary Polling Password	Yes	
10 Continuous Polling	Yes	
Convenience		
1 Panel Display	20 x 2 Alphanumeric LCD	
2 Voice Contact	No	
3 Edit File Mode	Yes	With View Mode
4 Incomplete File Save	Yes	With View Mode
5 Automatic Cover Sheet	No	
Certainty		
1 Verification Stamp	Yes	
2 Header / Total Page Print	Yes	
3 Transaction Journal	Yes	100 Transactions / with View Mode
4 Comm. Journal	Yes	With Image Data
5 Last Ind. XMT Journal	Yes	
List Printouts		
1 One-Touch List	Yes	
2 ABBR. No. List	Yes	
3 Program List	Yes	
4 Phone Book Search List	Yes	Auto Dialer List
5 Fax Parameter List	Yes	
6 File List	Yes	With View Mode
7 Ind. XMT Journal	Yes	
8 Directory Label	Yes	
Identifications		
1 Logo	Yes	25 Characters
2 Multiple Logo	No	
3 Character ID	Yes	16 Characters
4 Numeric ID	Yes	20 Digits

Items		Description	Remarks
		DP-1810F	
Special Communications			
1	Password XMT / RCV	Yes	
2	Selective Reception	No	TSI Check
3	Relay XMT Request	No	
4	Relay XMT Center	No	
5	Confidential XMT / Polling	No	
6	Confidential Center	No	
7	Mailbox XMT / Polling	Yes	
8	Mailbox Center	Yes	Max. 20 Mailboxes
9	File XMT	No	
10	Fax Forward	No	Received File Transfer
11	Sub-Address XMT	Yes	T. Routing
12	Sub-address RCV	Yes	
13	OMR-XMT	No	
Standards			
1	PSTN	FCC Part 68: 1997 / Industry Canada No. CS-03: Issue 8 1996	
Others			
1	Fax Access Code	Yes	
2	PIN Code Access	Yes	For USA and Canada only
3	Intelligent Redial (A-1)	Yes	5 Files
4	Department Code	Yes	50 Codes
5	Power Saver Mode	Yes	
6	Self Diagnostic Function	Yes	
7	Remote Diagnostic Function	Yes	
8	Check & Call Function	Yes	
9	V.24 / Encryption Interface	No	



### 1.2.2. Printer Function

Items		Description				Remarks	
		DP-1510P	DP-1810P	DP-1810F	DP-2010E		
Interface							
	1	Centronics Parallel I/F (IEEE-1284)		Centronics Parallel Interface		ECP	
	2	LAN (Network)		Ethernet 10Base-T/ 100Base-TX		Requires the Optional Internet Fax Kit.	
	3	USB Port		No			
	4	IEEE-1394		No			
Printer Function							
	1	Printing Size		LDR, LGL, LTR, LTR-R, INV, A3, A4, A4-R, A5, A5-R, B4			
	2	Sheet Bypass		Yes			
	3	Stapling		No			
	4	Printing Resolution		600 dpi			
	5	Interface		Centronics Parallel Interface/Ethernet			
	6	OS		Win 98 / Me / Win NT 4.0 / Win 2000 / XP			
	7	GDI		Yes		JBIG Coding	
	8	PDL (PCL6)		Yes		Requires Optional PCL6 Emulation Kit.	
	9	PDL (PSII)		No			
	10	Duplex Printing		No	Yes		
	11	Collation Stack		Yes		Printer Driver Setting	
	12	Status Monitor		Yes		Win 95 / 98 / Me / Win NT 4.0 / Win 2000: Local Connection	
	13	Network Printing		Yes		Requires the Optional Internet Fax Kit.	
	14	Network Status Monitor		No			
	15	Smoothing		No			
	16	Applicable PC		IBM PC, AT or Compatible			
	17	Multi-Task Operation					
			Printing while Fax-XMT from Memory		Yes		
			Printing while Fax-RCV into Memory		Yes		
			Fax-XMT from Memory while Printing		Yes		
		Fax-RCV into Memory while Printing		Yes			
18	Output to Separate Tray for Printing, Fax, Copy		No				
19	Font		Yes		Requires Optional PCL6 Emulation Kit.		
20	Security Print		No				

Items		Description				Remarks
		DP-1510P	DP-1810P	DP-1810F	DP-2010E	
Scanning Function						
1	Halftone	256 Halftone Shades, Gray Scale (Local Connection)				LAN : 256 Halftone Shades with Error Diffusion. Requires the Optional Internet Fax Kit.
2	Max. Document Size	Ledger, A3				
3	Scanning Resolution	600 dpi (Max) 150 dpi (Gray Scale Max)				Selectable, 600 dpi Optical Scanner, LAN: 400 dpi (Max.)
4	Driver	TWAIN				
5	2-Sided Scanning	No			Yes*	With i-ADF option.

### 1.2.3. Internet Fax Function

**Note:**

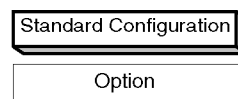
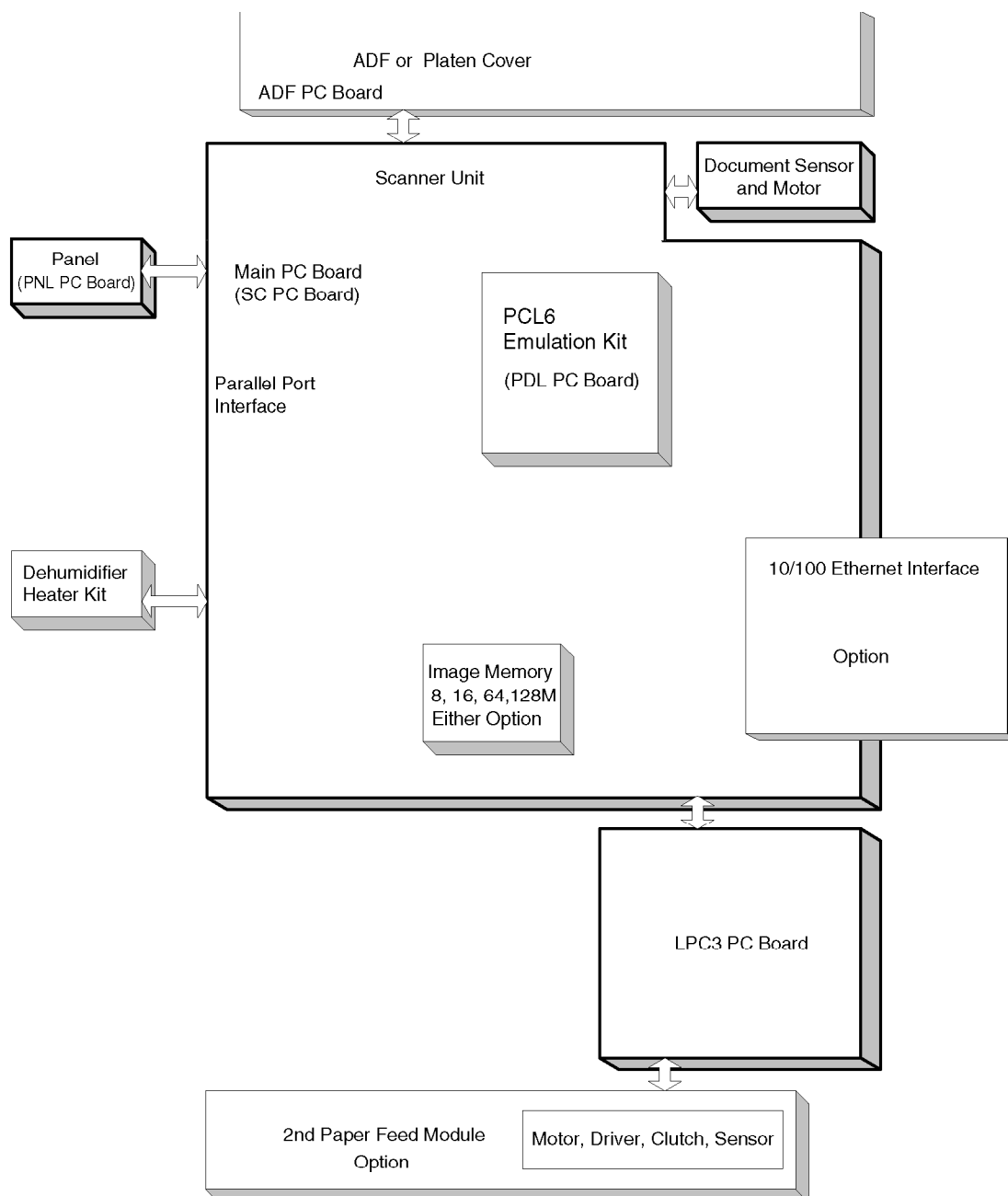
DP-1810F model only.

Items		Description	Remarks	
		DP-1810F		
Main Specifications				
	1	Communication Protocols	TCP / IP	SMTP / MIME
	2	Max. Modem Speed	NA	
	3	Coding Scheme	MH / MMR	400 dpi : MMR only
	4	ECM	No	
	5	Line Interface	RJ-45 (Ethernet)	Ethernet LAN
Scanner Mechanism				
	1	Max. Document Size	LDR / A3	
	2	Effective Scanning Width	11.4" (289 mm)	
	3	Scanning Resolution (pel/mm x lines/mm)	8 x 3.85	LAN: 400 dpi Scanning Resolution is available with Parameter setting.
			8 x 7.7	
8 x 15.4				
	16 x 15.4			
Printer Mechanism				
	1	Printing Resolution	600 dpi	FAX : 406 x 391 dpi Network Printer : 600 dpi
	2	Effective Recording Width	11.4" (289 mm)	
Transmission Features				
	1	Multi-Task Operation	Yes	Simultaneous operation of G3 Fax and LAN is available.
	2	Memory Transmission	Yes	
	3	Sequential Multi-Station Transmission	No	
	4	Simultaneous Multi-Station Transmission	Yes	Max. 190 stations
	5	Sender Selection	Yes	
	6	G3 / Email Mixed Broadcasting	Yes	
	7	Deferred Transmission	Yes	
	8	Fax Forward	Yes	Received File Transfer, only with I-FAX Option
	9	Sub-address RCV	Yes	Inbound Routing, only with I-FAX Option
	10	Mail Header		
		Email Header Print Selection	Yes	All or From / To / Subject only
		Subject Line	Random Entry	
		CC/BCC Selection	Yes	
LAN Features				
	1	Internet Fax Communication	Yes	A3 Communication is available with Parameter setting.
	2	Internet Mail Reception	Yes	

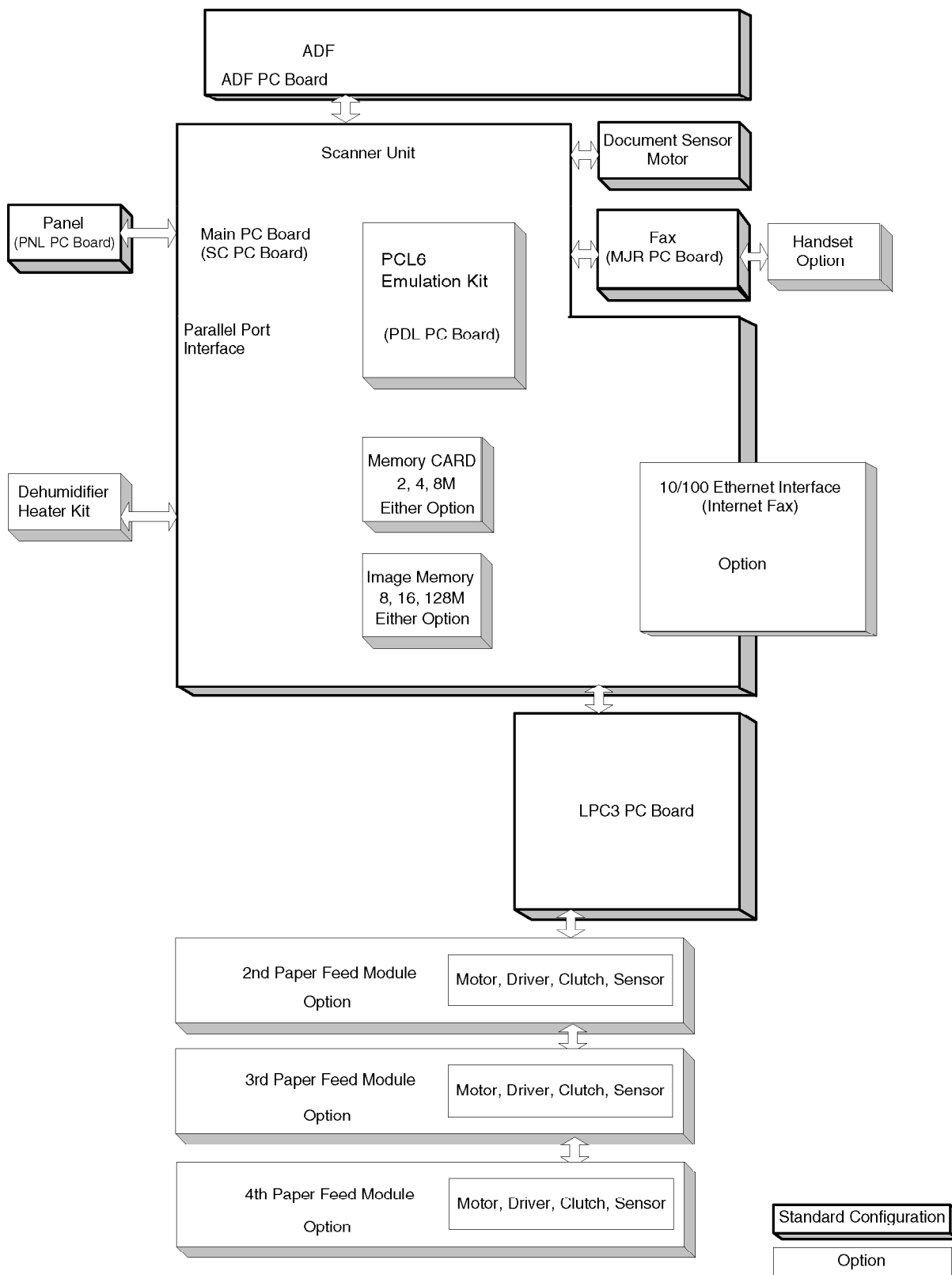
Items		Description	Remarks
		DP-1810F	
3	Internet Fax Server Features		
	Internet Fax Relay XMT	Yes	iFAX → iFAX → G3FAX
	Email Relay MXT	Yes	PC → iFAX → G3FAX
	Received Fax / Email Forward	Yes	Local print available
	PC to FAX Transmission	No	
	Inbound Routing	Yes	Using Sub-Address. Local print available
	Phone Book Registration from PC	Yes	Via Email
4	i-Fax Parameters Registration via Email	Yes	
5	Internet Delivery Confirmation	Yes	Its own mode
6	Network Scanning	Yes (400 dpi)	400 dpi (Default / Max.). 600 dpi is not available. Network Scanning mode can be selected during setup.
7	Network Printing		
	LPR / LPD	Yes (600 dpi)	
	GDI	Yes	Parallel Port is not available when connected to the LAN.
	PDL	Yes	Requires Optional PCL6 Emulation Kit.
8	DHCP Client	No	
<b>Certainty</b>			
1	Comm. Journal (w / Image)	Yes	Email from RCV side to Panafax i-Fax's only.
<b>ID</b>			
1	Email Address	Yes	

### 1.3. System Combination

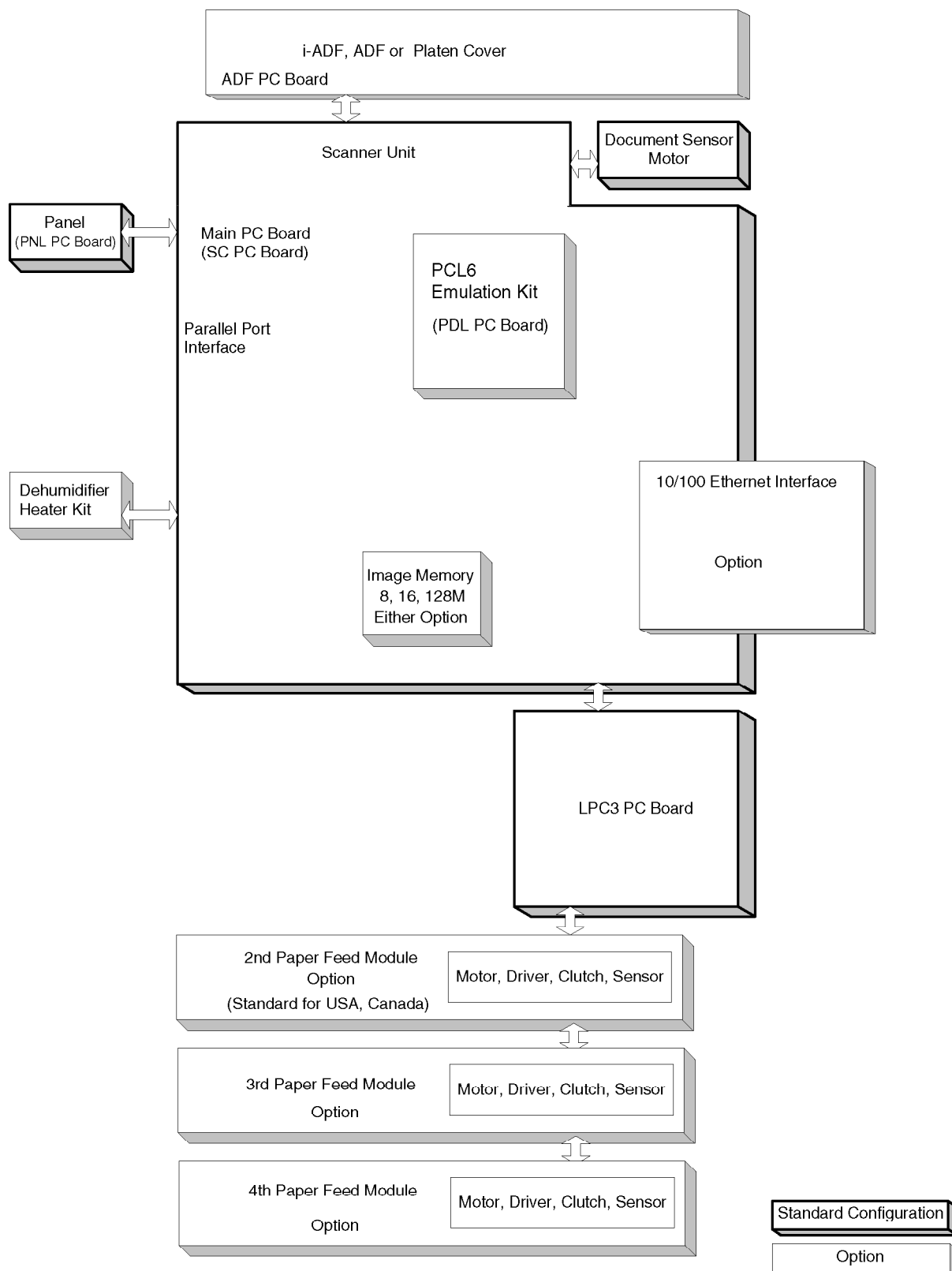
For DP-1510P/1810P



**For DP-1810F**



**For DP-2010E**



## 1.4. Option and Supply Lists

### 1.4.1. Options

Part Name	Part Number	Remarks
10/100 Ethernet Interface	DA-NE200	Available in Specified Destinations
PCL6 Emulation Kit	DA-PC210	
Image Memory (8MB)	DA-SM08B	Only one module can be installed.
Image Memory (16MB)	DA-SM16B	
Image Memory (64MB)	DA-SM64B	
Image Memory (128MB)	DA-SM28B	
Handset Kit	UE-403167	For U.S.A/Canada
	UE-403117	For Other Destinations
Expansion Flash Memory Card, 2MB	UE-410046	
Expansion Flash Memory Card, 4MB	UE-410047	Only for DP-1810F
Expansion Flash Memory Card, 8MB	UE-410048	
Automatic Document Feeder	DA-AS180	Standard for DP-1810F
Inverting Automatic Document Feeder (i-ADF)	DA-AR201	Only for DP-2010E
2nd/4th Paper Feed Module	DA-DS182	
3rd Paper Feed Module	DA-DS183	Except for DP-1510P/1810P

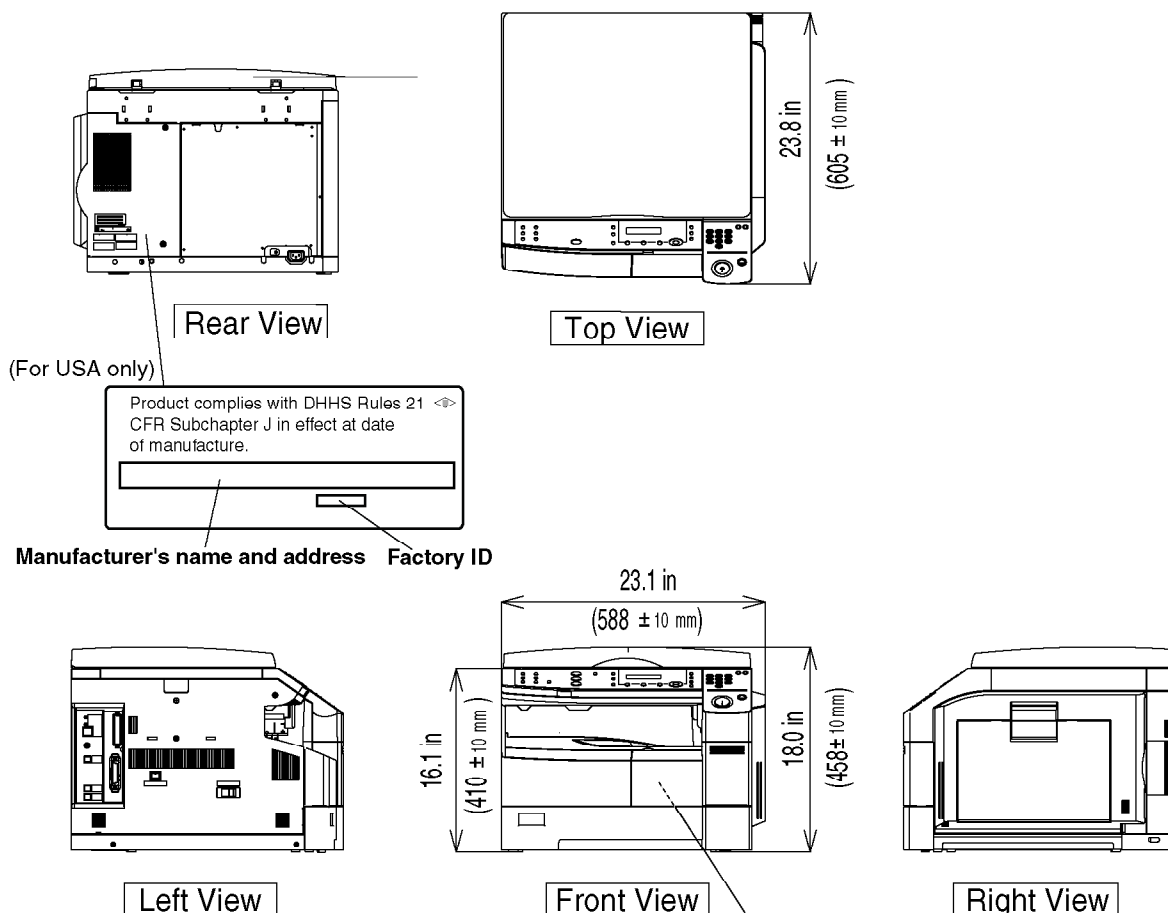
### 1.4.2. Supplies

Part Name	Part Number	Remarks
Toner Bottle	DQ-TU10C	Sales Route
OPC Drum	DQ-H045B	



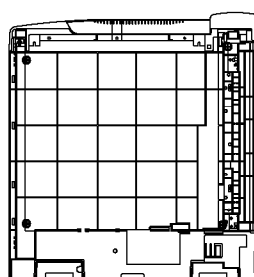
## 1.5. External View

For DP-1510P/1810P/2010E



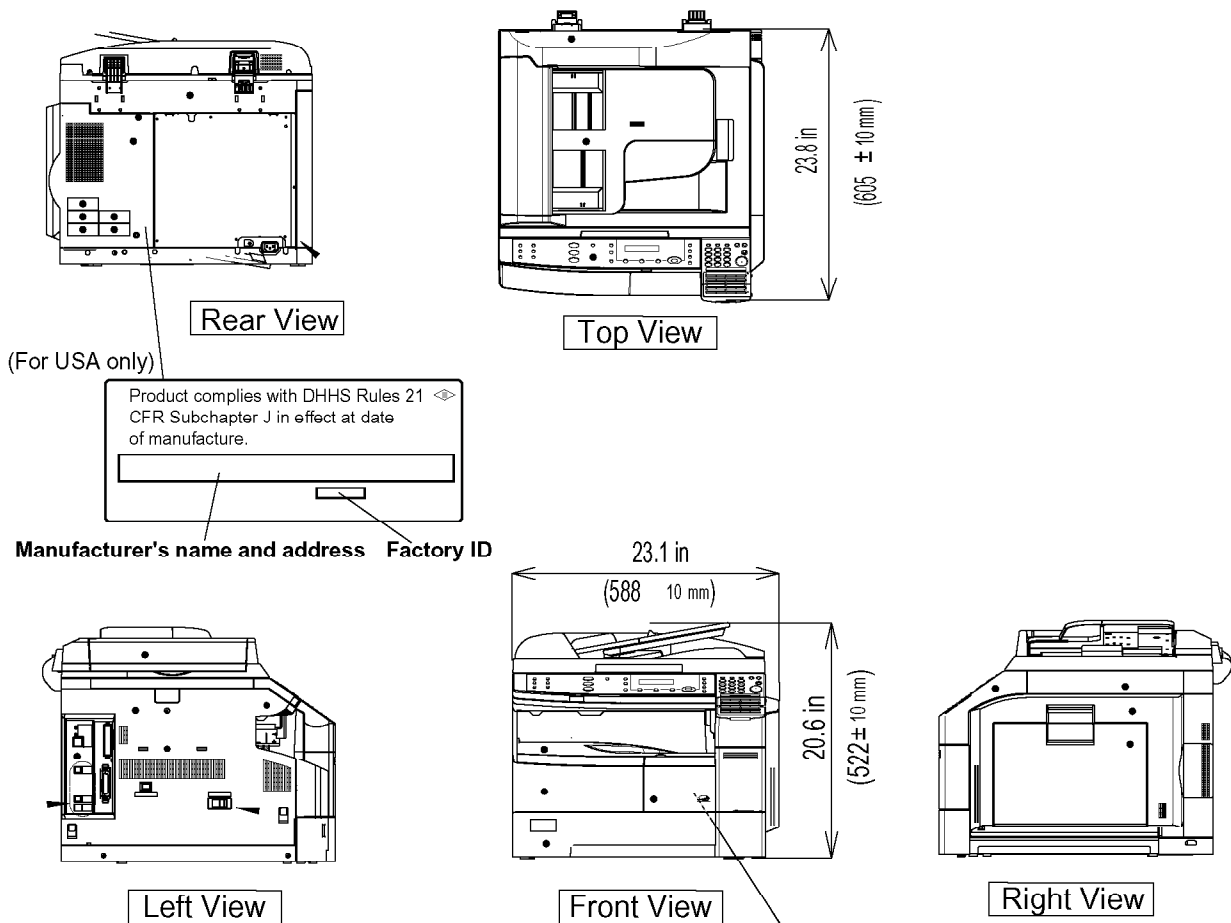
• **DANGER** : Invisible laser radiation when open and interlock defeated. AVOID DIRECT EXPOSURE TO BEAM.  
 • **CAUTION** : Invisible and hazardous laser radiation when interlocks defeated. AVOID EXPOSURE TO BEAM.  
 • **ATTENTION** : Rayonnement laser invisible dangereux lorsque la sécurité est neutralisée. EXPOSITION DANGEREUSE AU FAISCEAU.  
 • **VORSICHT** : Unsichtbare Laserstrahlung, wenn Sicherheitsverriegelung überbrückt. NICHT DEM STRAHL AUSSETZEN.  
 • **PELIGRO** : Cuando se invalida el bloqueo, se producen radiaciones invisibles de láser. EVITESE LA EXPOSICIÓN DIRECTA A TALES RAYOS.  
 • **VARO!** : Näkymättömäs ja vaarallista laserstrålusta ohittettaessa. Vältä suoraan altistumista säteille.  
 • **ADVARSEL** : USYNLIG LASERSTRÅLING NÅR SIKKERHEDS-LÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLING.  
 • **ADVARSEL** : OSYNLIG LASERSTRÅLING NÅR SPÄRRARÄR URKOPPLADE. STRÅLEN ÄR FARLIG.  
 • **WARNING** : OSYNLIG LASERSTRÅLING NÅR SPÄRRARÄR URKOPPLADE. STRÅLEN ÄR FARLIG.  
 • **注意** : 为防止激光辐射, 当连接本机时, 请勿直视激光柱下。  
 • **주의** : 연결장치가 고장 있을 때에는 눈에 보이지않고 위험한 레이저 방사선이 빛에 직접 닿지않도록 해 주십시오.

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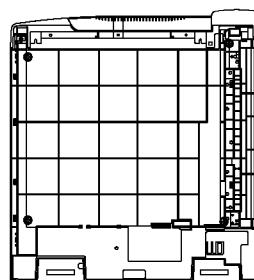
**Bottom View**

# For DP-1810F



- **DANGER** : Invisible laser radiation when open and interlock defeated. AVOID DIRECT EXPOSURE TO BEAM.
- **CAUTION** : Invisible and hazardous laser radiation when interlocks defeated. AVOID EXPOSURE TO BEAM.
- **ATTENTION** : Rayonnement laser invisible dangereux lorsque la sécurité est neutralisée. EXPOSITION DANGEREUSE AU FAISCEAU.
- **VORSICHT** : Unsichtbare Laserstrahlung, wenn Sicherheitsverriegelung überbrückt. NICHT DEM STRAHLE AUSSETZEN.
- **PELIGRO** : Quando se invalida el bloqueo se producen radiaciones invisibles de láser. EVITESE LA EXPOSICIÓN DIRECTA A TALES RAYOS.
- **VARO!** : Näkymättömät ja vaarallista lasersäteilyä suojalukitus ohitettaessa. Vältä suoraa altistumista säteelle.
- **ADVARSEL** : USYNLIG LASERSTRÅLING NÅR SIKKERHEDSAF-BRYDERE ER UDE AF FUNKTION. UNDGÅ UDSETTELSE FOR STRÅLING.
- **ADVARSEL** : USYNLIG LASERSTRÅLING NÅR SIKKERHEDS-LÅS BRYTES. UNNGÅ EKSPONERING FOR STRÅLEN.
- **WARNING** : OSYNLIG LASERSTRÅLING NÅR SPÄRRAR ÄR URKOPPLADE. STRÅLEN ÄR FARLIG.
- **注意** : 为防止激光照射, 当连接本机时, 请勿暴露在光柱下。
- **주의** : 연결장치가 고장 났을 때에는 눈에 보이지않고 위험한 레이저 방사선이 빛에 직접 닿지않도록 해 주십시오.

FB58902



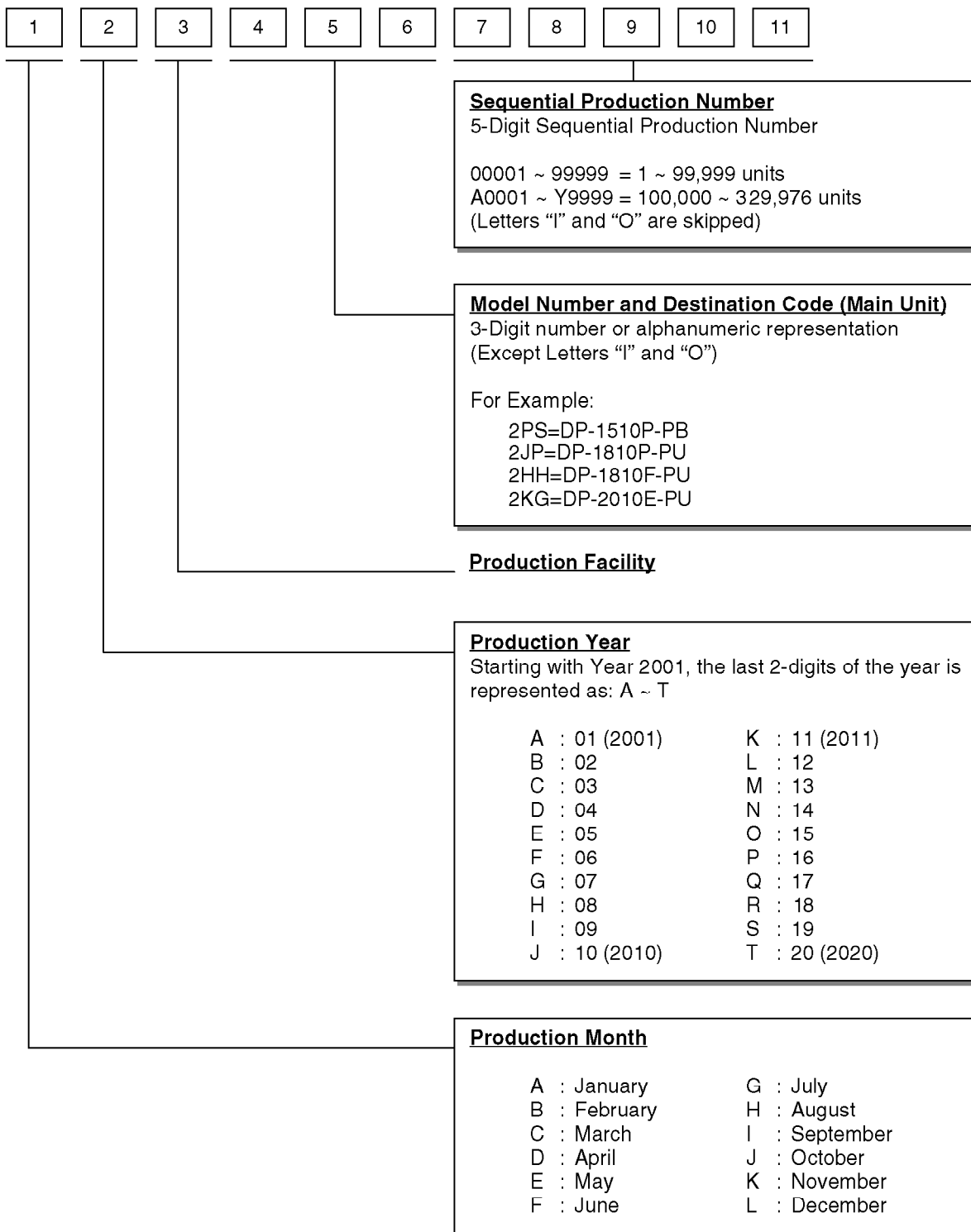
**Bottom View**

## CAUTION

THIS PRODUCT CONTAINS A LITHIUM BATTERY. DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED.  
REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE. DISPOSE OF USED BATTERIES ACCORDING TO THE INSTRUCTIONS OF YOUR LOCAL SOLID WASTE OFFICIALS.

### 1.5.1. Serial Number Contents

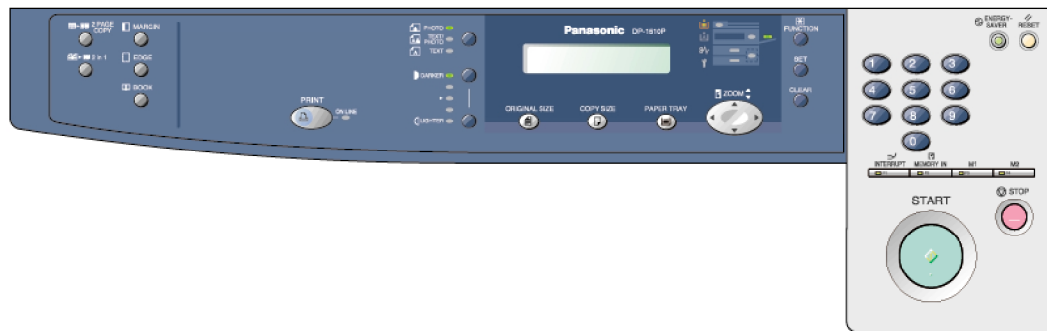
The contents of the 11-digit Serial Number is as follows:



## 1.6. Control Panel

### DP-1510P

For EURO and Other Destinations



### DP-1810P

For USA and Canada



For Other Destinations



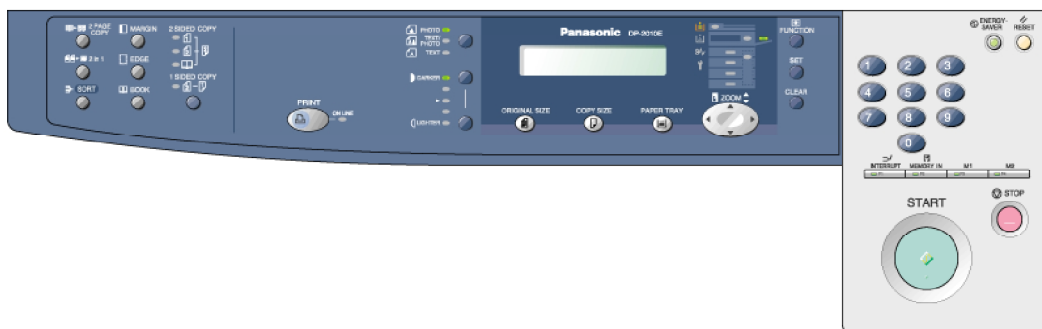
## DP-1810F For All Destinations



## DP-2010E For USA and Canada

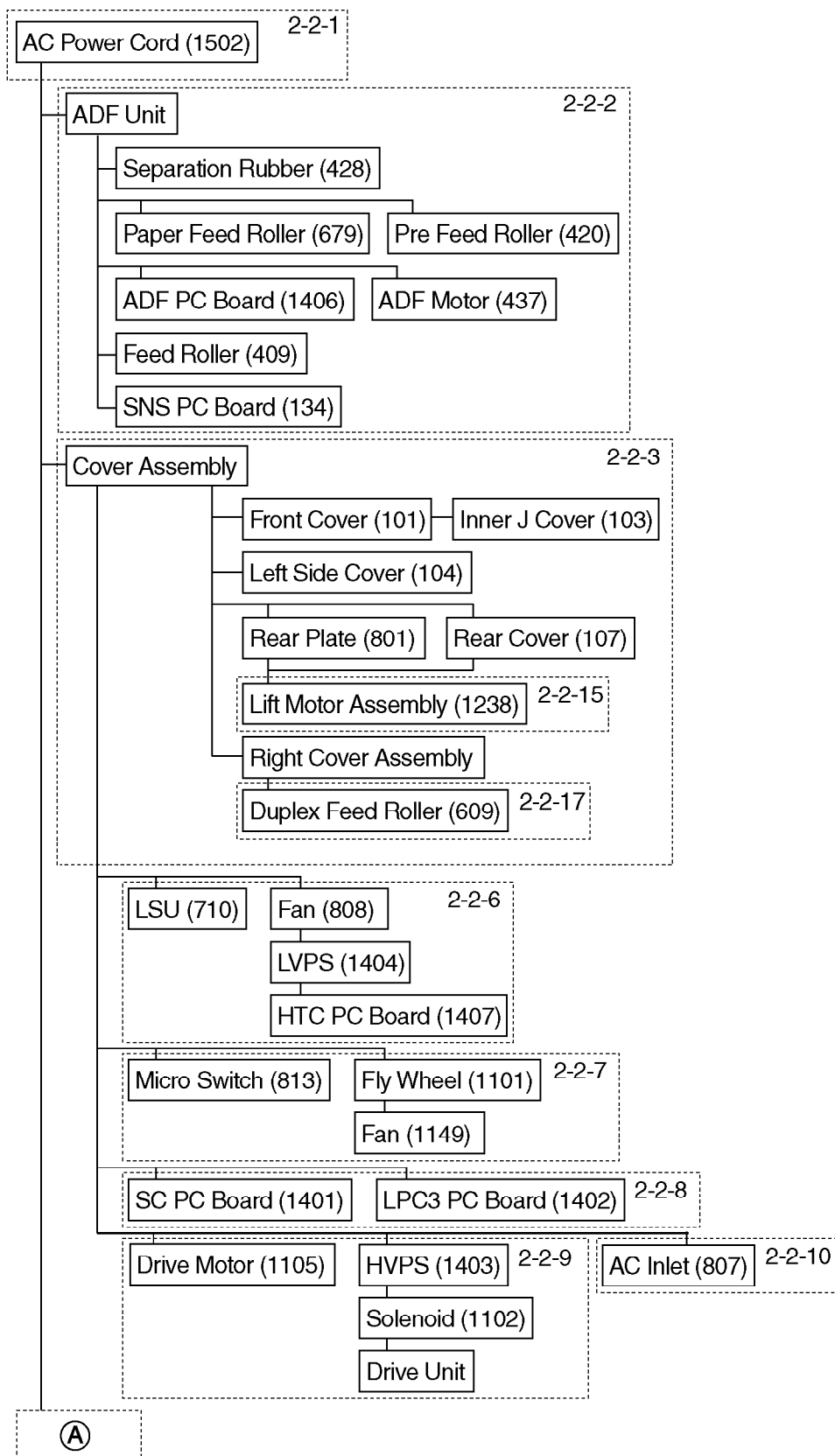


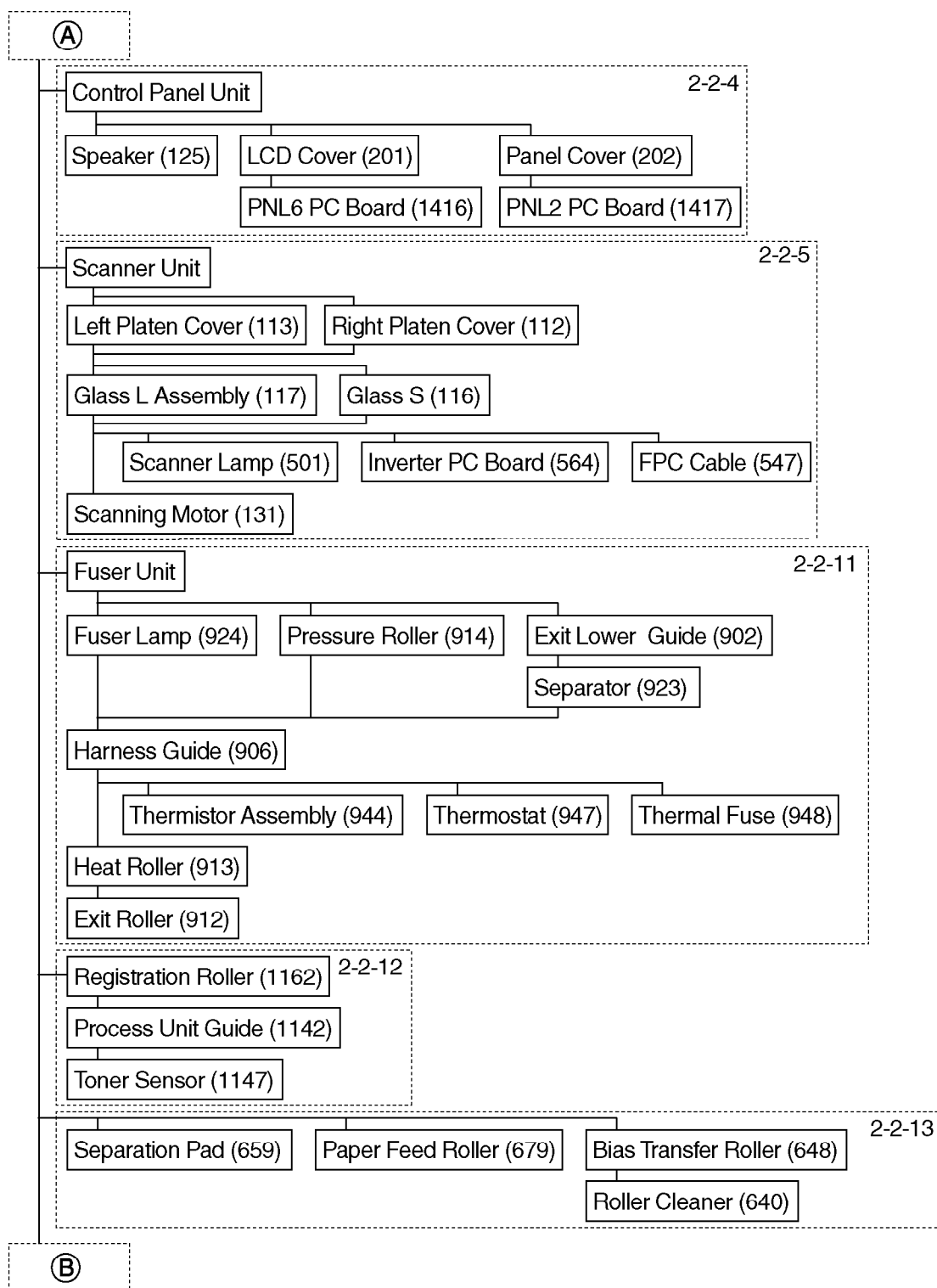
## For Other Destinations

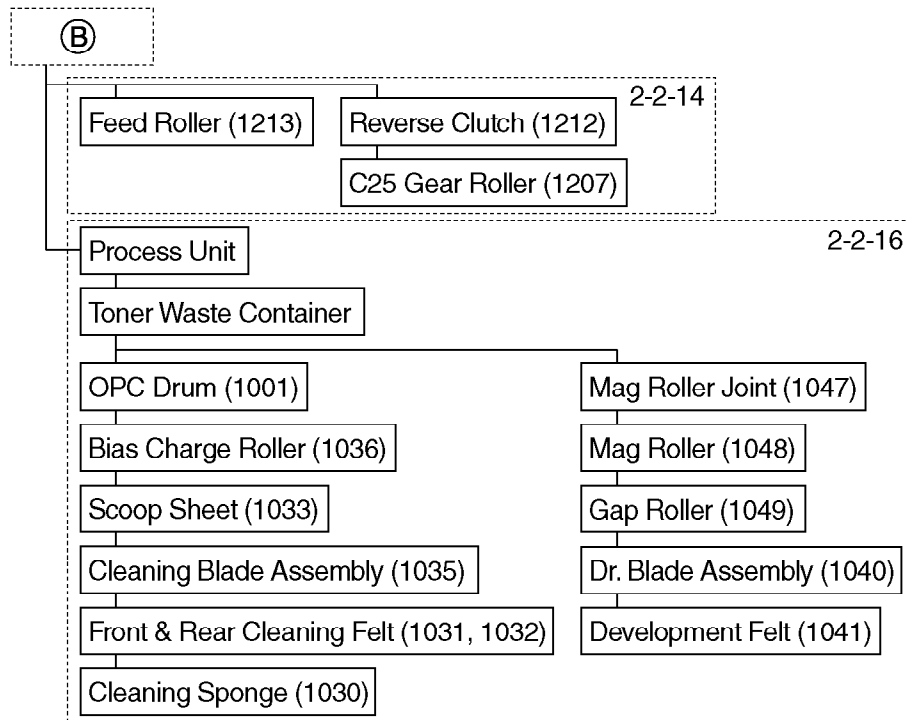


## 2 Disassembly Instructions

### 2.1. General Disassembly Flowchart



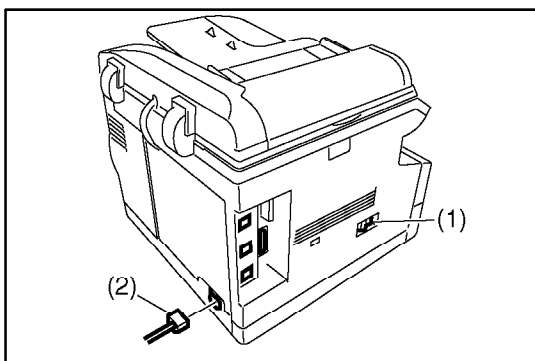




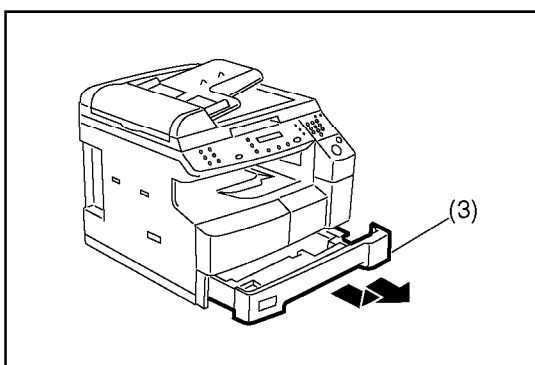


## 2.2. Disassembly Instructions

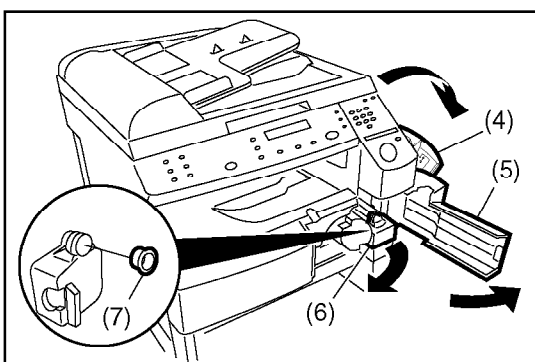
### 2.2.1. Power Cord, Recording Paper Tray, Process Unit



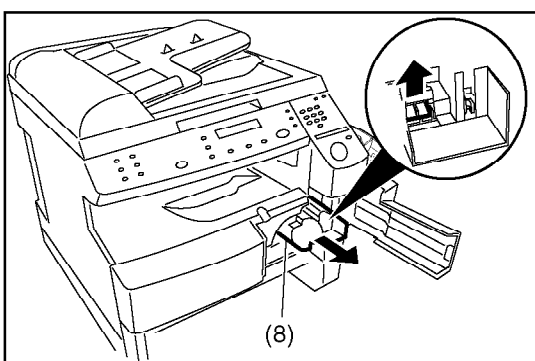
- (1) Turn the Power Switch to the OFF (O) position.
- (2) Disconnect the **AC Power Cord** (1502).



- (3) Remove the **Paper Tray**.

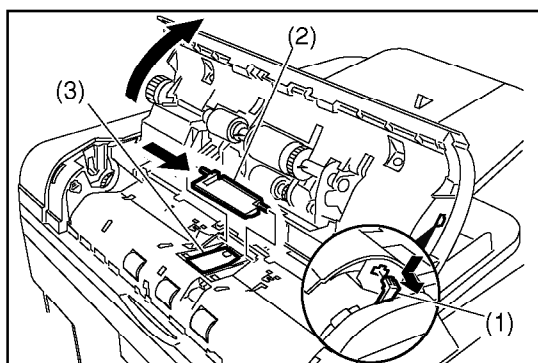


- (4) Open the **Right Cover** (601).
- (5) Open the **Front Door Cover** (102).
- (6) Remove the **Toner Waste Container** by slowly pulling it towards the left as illustrated.
- (7) Seal the Container with the enclosed cap and dispose of it properly.

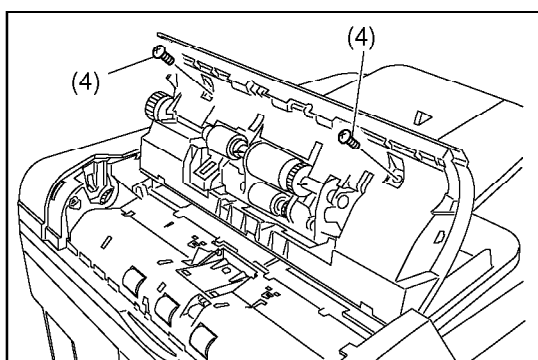


- (8) Lift the **Release Latch** (White) and remove the **Process Unit**.

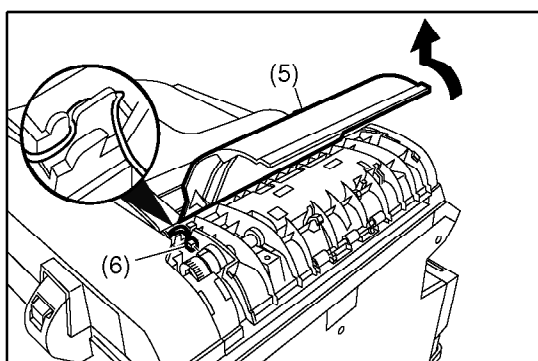
## 2.2.2. ADF Unit



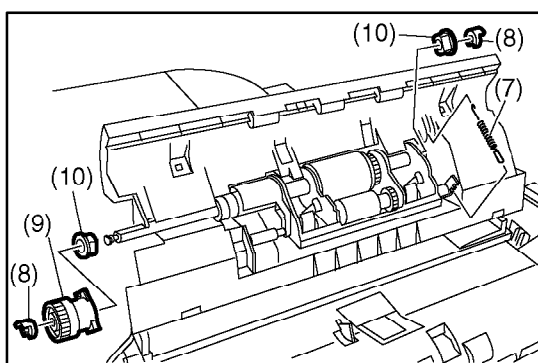
- (1) Open the **ADF Cover** (418) and release the **ADF Cover Stopper** (414).
- (2) Remove the **Pad Cover** (427).
- (3) Remove the **Separation Rubber** (428).



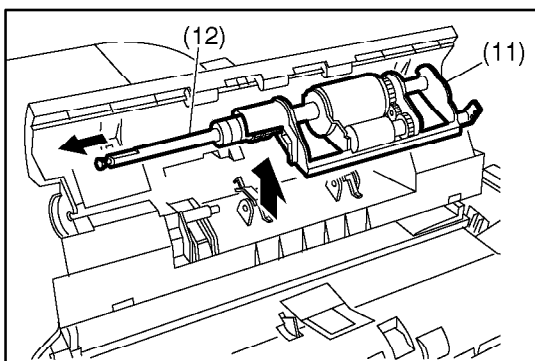
- (4) 2 **Screws** (19).



- (5) Remove the **ADF Cover** (418).
- (6) Disconnect the **ADF Harness** (1836).



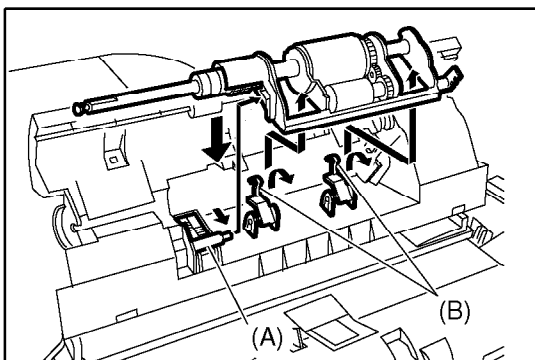
- (7) Remove the **Pick Up Spring** (426).
- (8) Remove 2 **Snap Rings** (G3).
- (9) Remove the **Clutch** (1141).
- (10) Remove 2 **Bushings** (410).



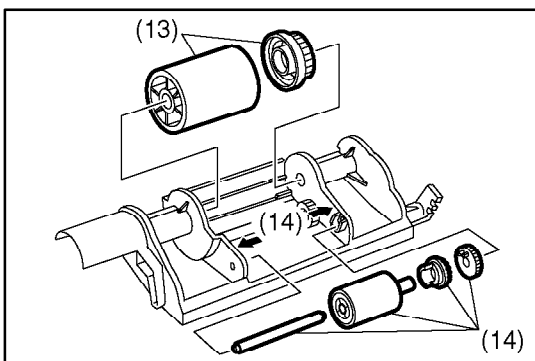
- (11) Remove **Roller Holder** (430) Assembly.
- (12) Remove the **Paper Feed Shaft Assembly** (433).

**Note:**

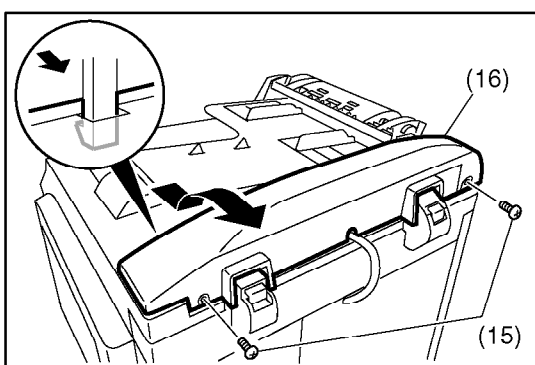
When re-installing, make sure that the **Roller Holder** (430) Assembly is properly placed on the ADF Unit.

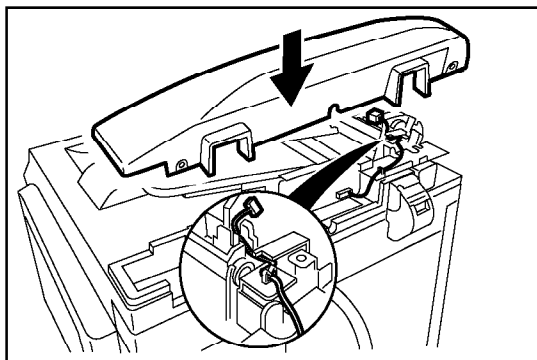


- (13) Remove **Paper Feed Roller** (679) and **D26 D Gear** (429).
- (14) Remove the **Pre Feed Roller** (420), **Pre Feed Shaft** (421) and **Pre Feed Gear 1 and 2** (422, 423).



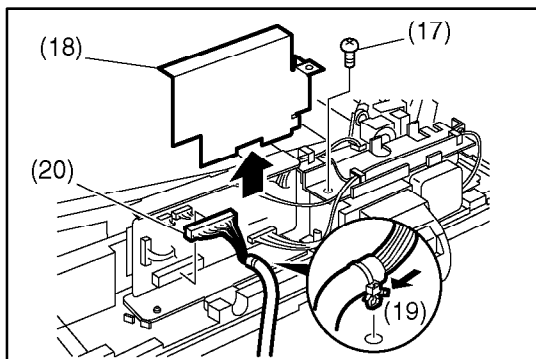
- (15) 2 **Silver Screws** (B1).
- (16) Lift cover and release the **Latch Hook** then remove the **ADF Rear Cover** (301).





**Note:**

When re-installing the **ADF Rear Cover (301)**, make sure that the **ADF Harness** is properly placed as shown in the illustration.



(17) 1 **Screw (19)**.

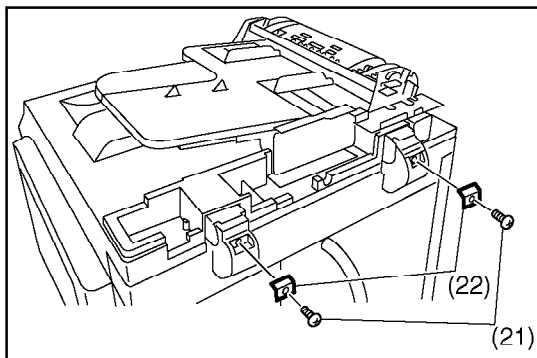
(18) Remove the **ADF PC Board Cover (453)**.

(19) Release the **Clamp** from ADF Unit.

**Note:**

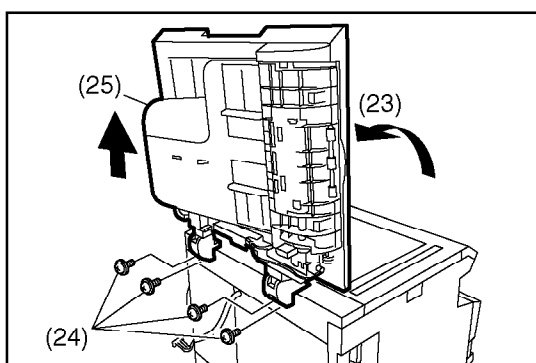
Do not cut the Tie-Wrap. Push the release clip on the side of the clamp to remove it.

(20) Disconnect the **Harness (1806)** on the ADF PC Board (CN21).



(21) 2 **Silver Screws (B1)**.

(22) Remove 2 **Angle Plate (305)**.



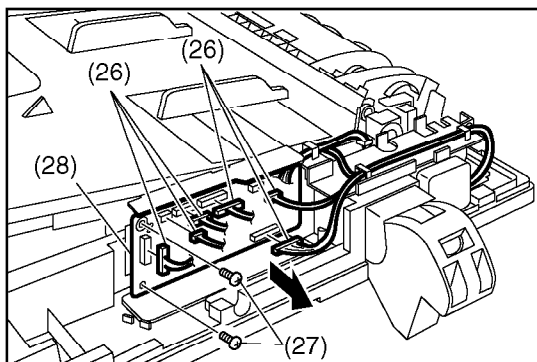
(23) Open the **ADF Unit**.

(24) 4 **Screws (6A)**.

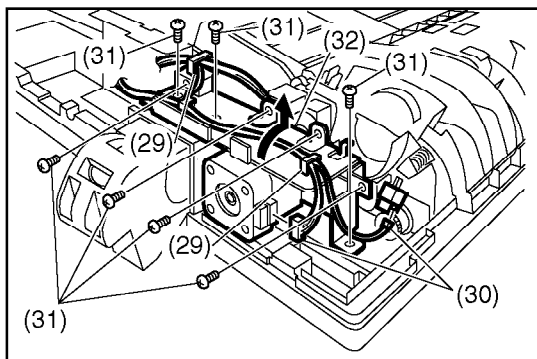
**Caution:**

Don't close the ADF Unit subsequent to this step.

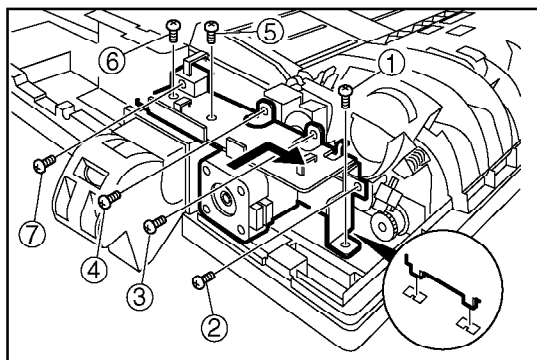
(25) Remove the **ADF Unit**.



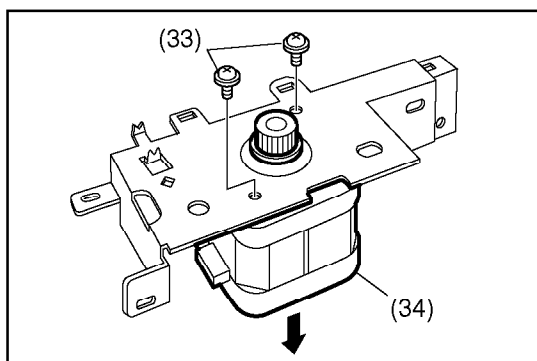
- (26) Disconnect 5 **Harnesses** (1836, 1837, 1838, 1839, 1840) on the ADF PC Board. (6 connectors)
- (27) 2 **Screws** (19).
- (28) Remove the **ADF PC Board** (1406).



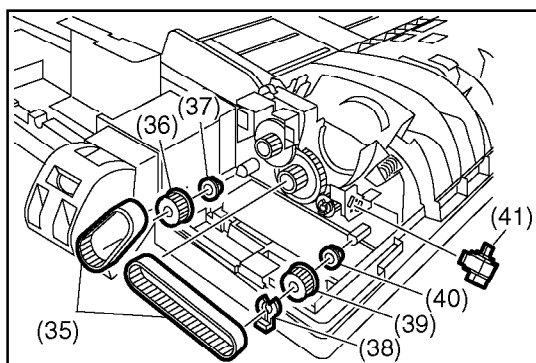
- (29) Release the **Harness** from the Clamp.
- (30) Disconnect 2 **Harnesses** (1836, 1838).
- (31) 7 **Screws** (19).
- (32) Remove the **Motor Bracket** (439) Assembly.



**Note:**  
When re-assembling the **Motor Bracket** (439) Assembly, follow the steps as illustrated.



- (33) 2 **Screws** (18).
- (34) Remove the **ADF Motor** (437).

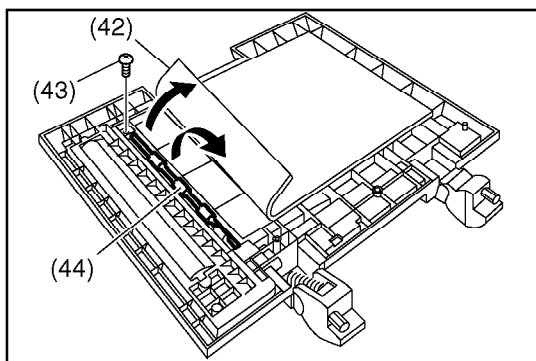


- (35) Remove 2 **Drive Belts** (444, 445).
- (36) Remove the **S27 Pulley** (443).
- (37) Remove the **Bushing** (410).
- (38) Remove the **Snap Ring** (B9).
- (39) Remove the **S27 Pulley** (443).
- (40) Remove the **Bushing** (410).
- (41) Release the clips and remove the **Switch** (724).

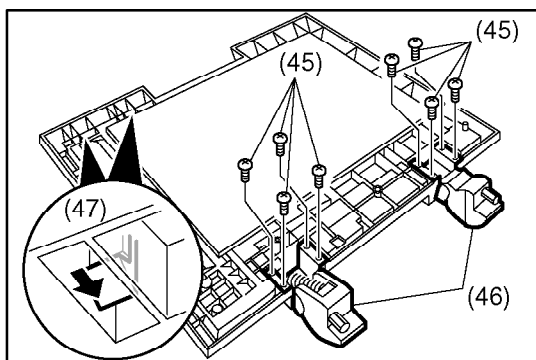
**Note:**

Apply Molykote EM-50L Grease to 3 shafts on Bracket R (447).

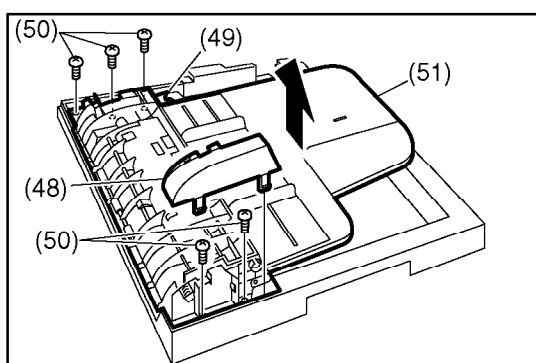
**<Turn the ADF upside down>**



- (42) Remove the edge of the **Scanning Pad** (338).
- (43) 1 **Screw** (19).
- (44) Remove the **Exit Roller** (316) and **P6L8 Bushing** (317).

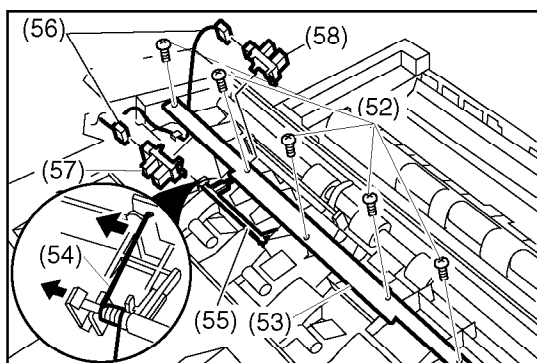


- (45) 8 **Screw** (1N).
- (46) Remove the **Hinge Units L and R**.
- (47) Release 2 **Latch Hooks**.



**<Return the ADF to its upright position>**

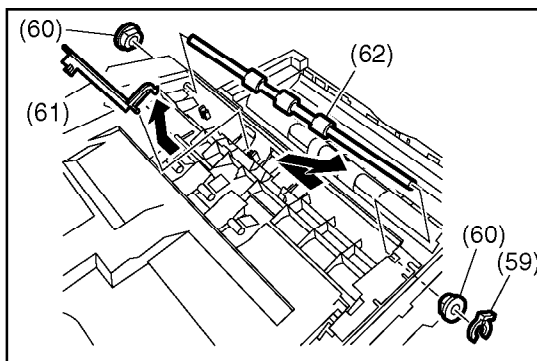
- (48) Remove the **ADF Front Cover** (302).
- (49) Release the **Harnesses** (1837, 1839) from the Clamp.
- (50) 5 **Screws** (19).
- (51) Remove the **Original Tray**.



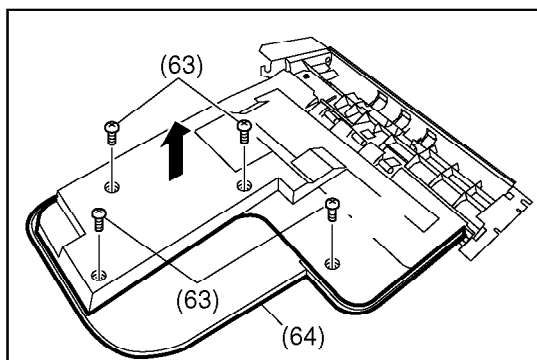
- (52) 5 **Screws** (19).
- (53) Remove the **Center Bracket** (452).
- (54) Release the **NP Actuator Spring** (408).
- (55) Remove the **NP Actuator** (407).
- (56) Disconnect the **Harness** (1837). (2 Connectors)
- (57) Remove the **Photo Sensor** (604).
- (58) Remove the **Photo Sensor** (604).

**Note:**

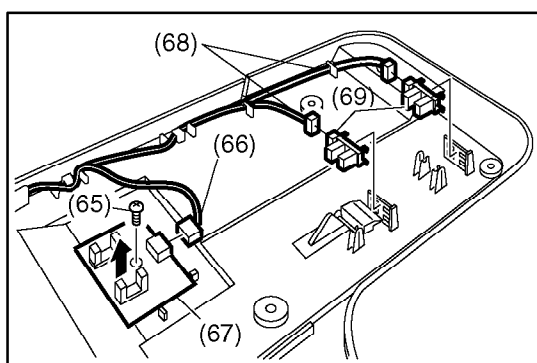
Do not break the Latch Hooks when removing or re-installing the Photo Sensors (604).



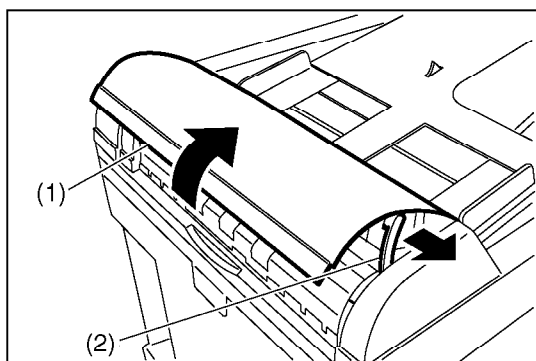
- (59) Remove the **Snap Ring** (B9).
- (60) Remove 2 **Bushing** (410).
- (61) Remove the **Timing Actuator** (403).
- (62) Remove the **Feed Roller** (409).



- (63) 4 **Silver Screws** (B1).
- (64) Remove the **Original Lower Tray** (327).

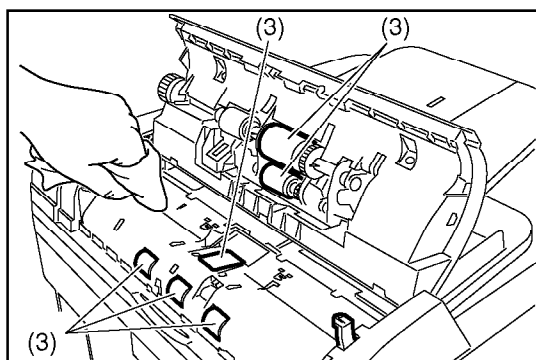


- (65) 1 **Screw** (62).
- (66) Disconnect the **Harness** (1839) on the SNS PC Board.
- (67) Remove the **SNS PC Board** (134).
- (68) Disconnect 2 **Harnesses** (1839) on the Photo Sensors.
- (69) Remove 2 **Photo Sensors** (604).

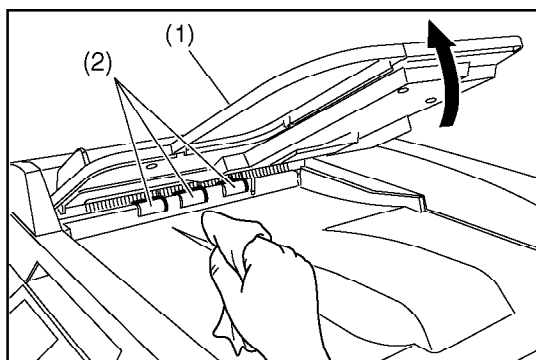


### <Cleaning the Rollers and Rubber>

- (1) Open the **ADF Cover**.
- (2) Release the **Stopper**.

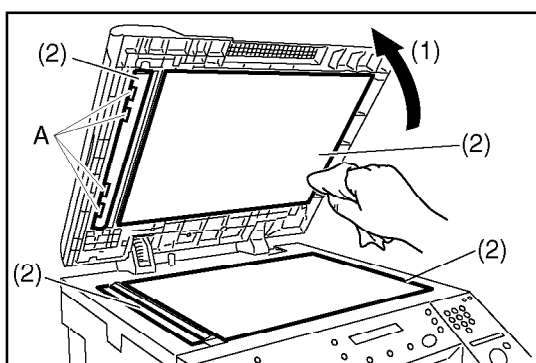


- (3) Clean the **Separation Rubber, Feed Roller, Pre Feed Roller and Paper Feed Roller** with a soft cloth, saturated with isopropyl alcohol.



### <Cleaning the Exit Roller>

- (1) Lift the **Original Tray**.
- (2) Clean the **Exit Roller** with a soft cloth, saturated with isopropyl alcohol.



### <Cleaning the Scanner>

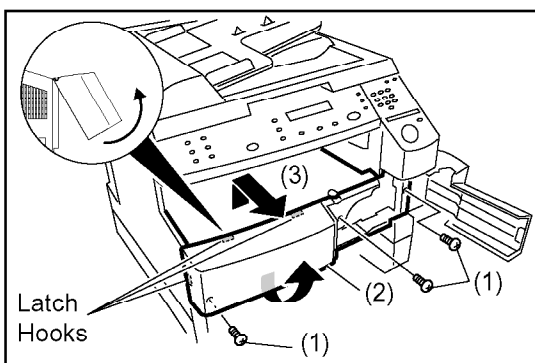
- (1) Open the **ADF Unit**.
- (2) Clean the **White Guide, Scanning Pad and Scanning Glasses** with a soft cloth, saturated with isopropyl alcohol.

#### **Note:**

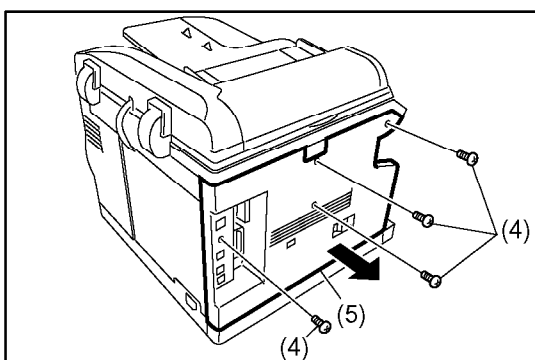
Ensure that the Film of the part A is not damaged.



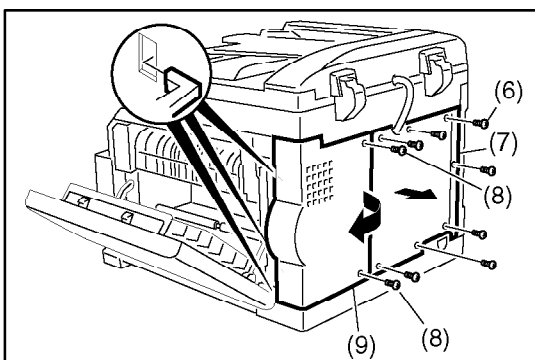
### 2.2.3. Cover Assembly



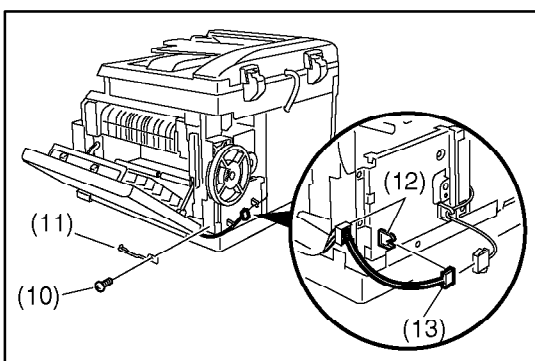
- (1) 3 **Screws** (19).
- (2) Release the 3 **Latch Hooks** and Remove the **Front Cover** (101).
- (3) Remove the **Inner J Cover** (103).



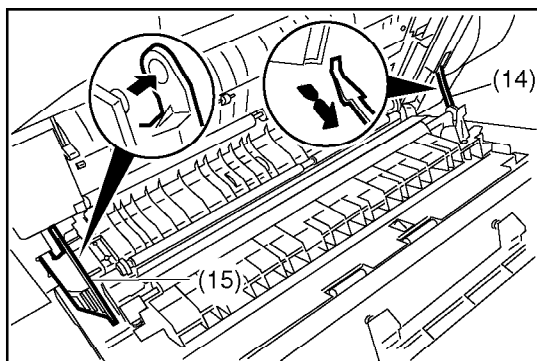
- (4) 4 **Silver Screws** (B1).
- (5) Remove the **Left Side Cover** (104).



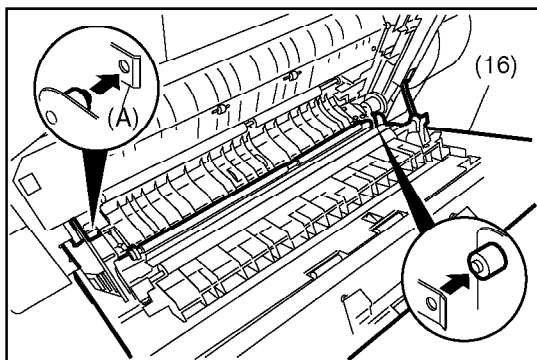
- (6) 7 **Screws** (19).
- (7) Remove the **Rear Plate** (801).
- (8) 2 **Silver Screws** (B1).
- (9) Remove the **Rear Cover** (107).



- (10) 1 **Screw** (19).
- (11) Remove the **Harness Cover** (158).
- (12) Release the **Harness** (1845) from the Clamps.
- (13) Disconnect the **Connector**.



- (14) Remove the **Right Cover Stopper** (625).  
(15) Remove the **Front Arm** (657).

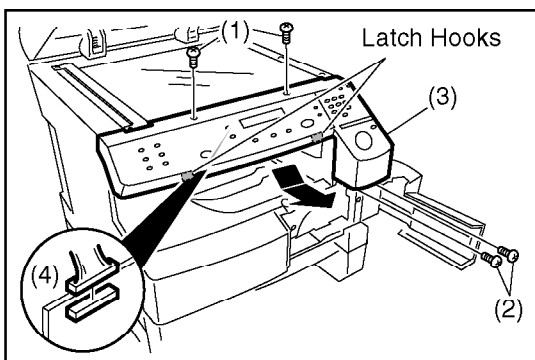


- (16) Remove the **Right Cover** (601) Assembly.

**Note:**

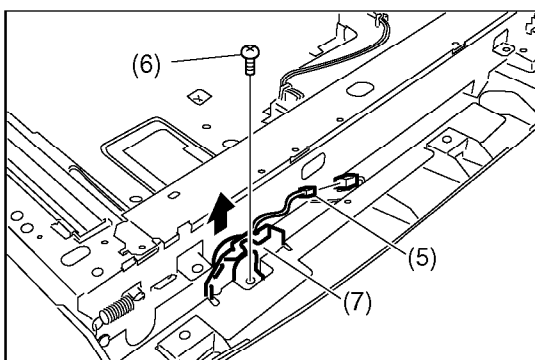
Remove the front fulcrum (A) and then pushing the **Right Cover** (601) Assembly toward the rear, remove the rear fulcrum.

## 2.2.4. Control Panel Unit

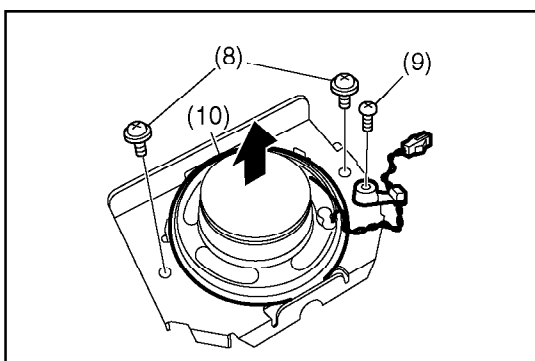


- (1) 2 **Silver Screws** (B1).
- (2) 2 **Screws** (19).
- (3) Release 2 **Latch Hooks** and remove the **Control Panel Assembly**.
- (4) Disconnect the **Harness** (1801) on the PNL6 PC Board (CN201).

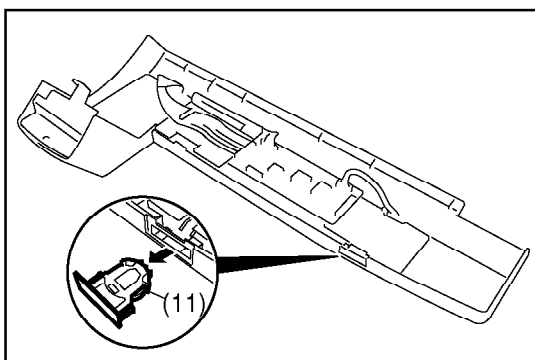
<Following steps (5)~(11) is for DP-1810F only>



- (5) Disconnect the **Harness**.
- (6) 1 **Screw** (19).
- (7) Remove the **Speaker** (125) Assembly.



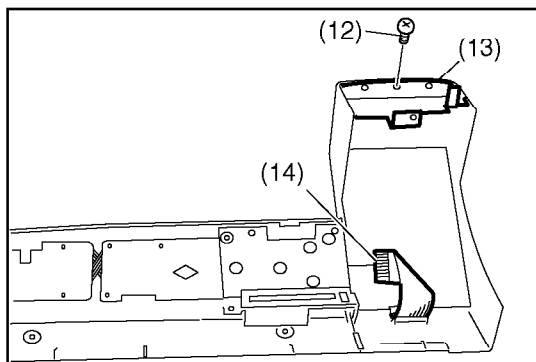
- (8) 2 **Screws** (C2).
- (9) 1 **Screw** (19).
- (10) Remove the **Speaker** (125).



- (11) Remove the **Battery Holder** (247).

**Note:**

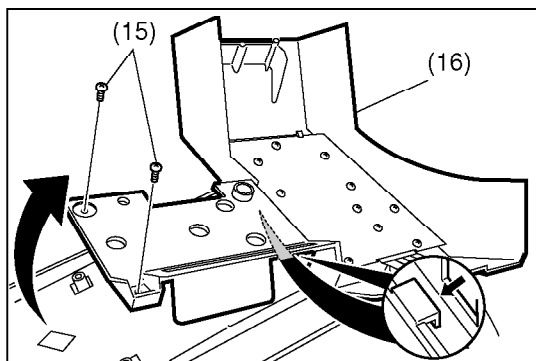
When re-installing, you need setting time.



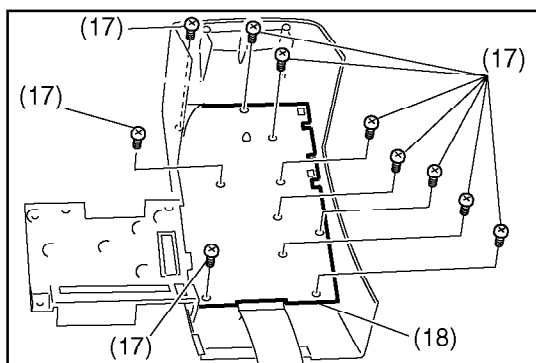
- (12) 1 **Screw** (19).
- (13) Remove the **Panel Bracket** (233).
- (14) Disconnect the **Harness** (1852) on the PNL6 PC Board (CN1).

**Note:**

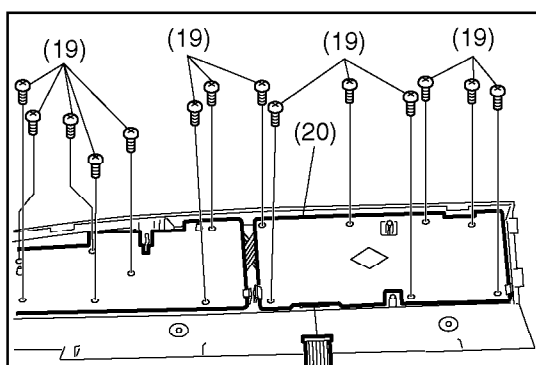
During re-assembly, reconnect this Harness to PNL6 PC Board prior to securing the board with the screws.



- (15) 2 **Screws** (7B).
- (16) Release 2 **Latch Hooks** and remove the **LCD Cover** (201) and **Panel Cover** (202).

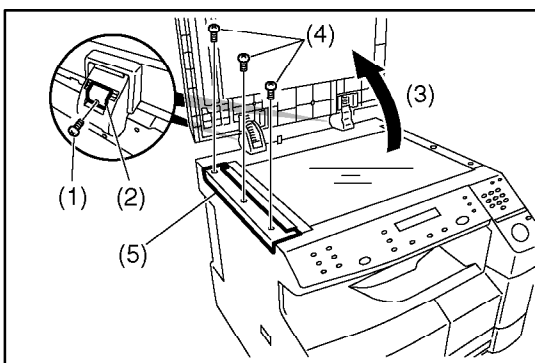


- (17) 10 **Screws** (7B).
- (18) Remove the **PNL2 PC Board** (1417).

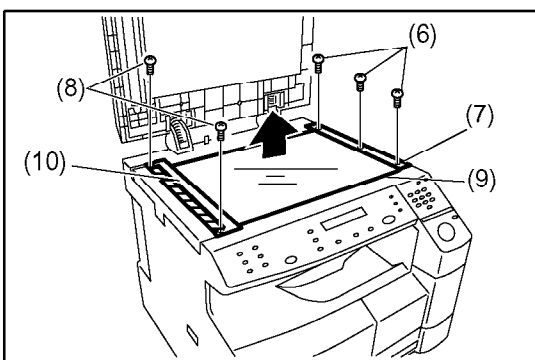


- (19) 14 **Screws** (7B).
- (20) Remove the **PNL6 PC Board** (1416).

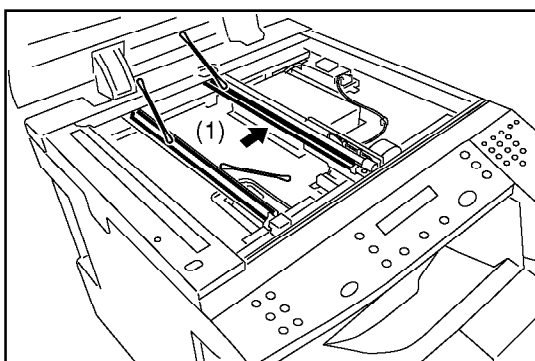
## 2.2.5. Scanner Unit



- (1) 2 **Silver Screws** (B1).
- (2) Remove 2 **Angle Plates** (305).
- (3) Open the **ADF Unit**.
- (4) 3 **Silver Screws** (B1).
- (5) Remove the **Left Platen Cover** (113).

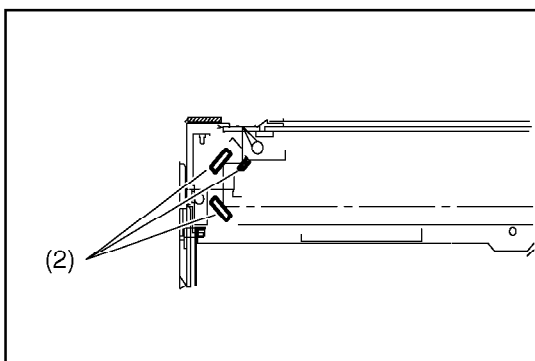


- (6) 3 **Silver Screws** (B1).
- (7) Remove the **Right Platen Cover** (112).
- (8) 2 **Screws** (19).
- (9) Remove the **Glass L Assembly** (117).
- (10) Remove the **Glass S** (116).

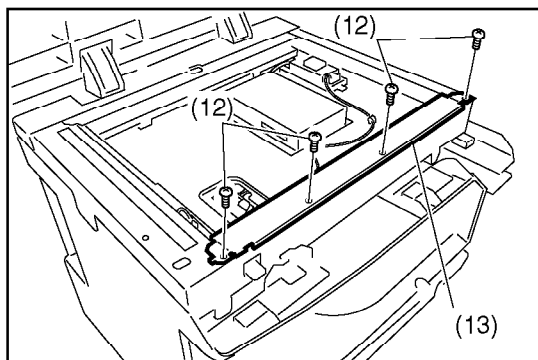


### <Cleaning the Mirror>

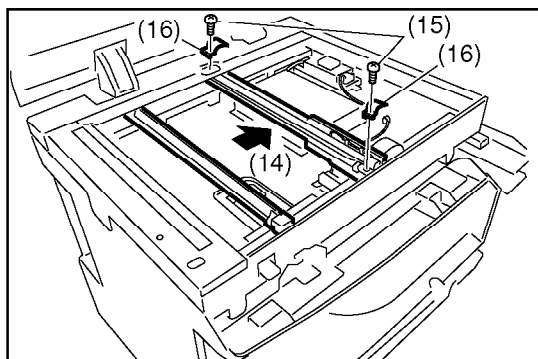
- (1) Move the Mirror Unit.



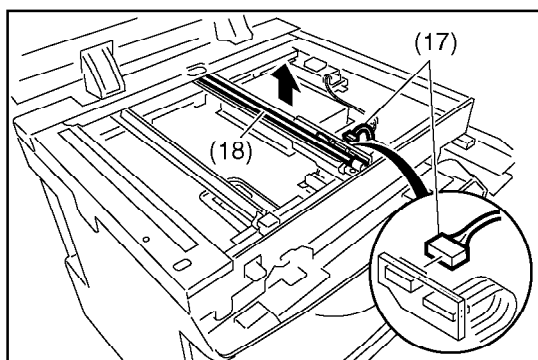
- (2) Clean the **Mirror 1** (551) and **Mirror 2** (552) with a soft cloth, saturated with isopropyl alcohol.



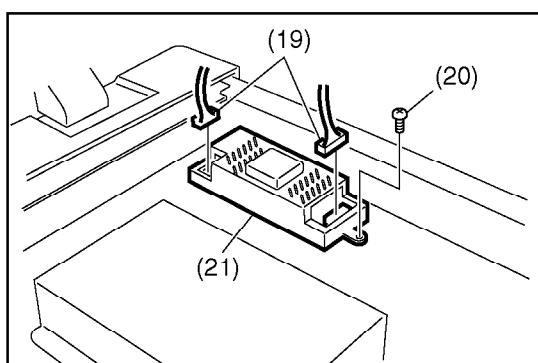
- (11) Remove the **Control Panel Unit**  
(Refer to 2.2.4.).
- (12) 5 **Screws** (19).
- (13) Remove the **F/R Scanner Frame** (532).



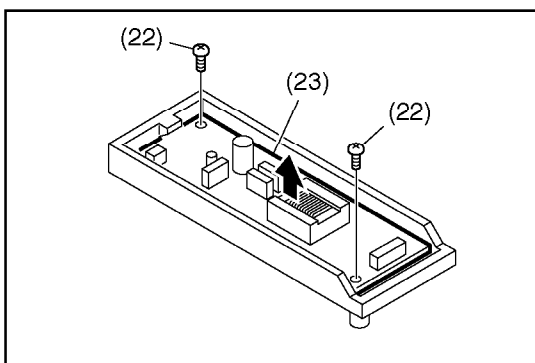
- (14) Move the **Lamp Base Bracket**.
- (15) 2 **Screws** (19).
- (16) Remove 2 **Lamp Plate Springs** (524).



- (17) Disconnect **Harness** on the LFB PC Board.
- (18) Remove the **Scanner Lamp** (501).

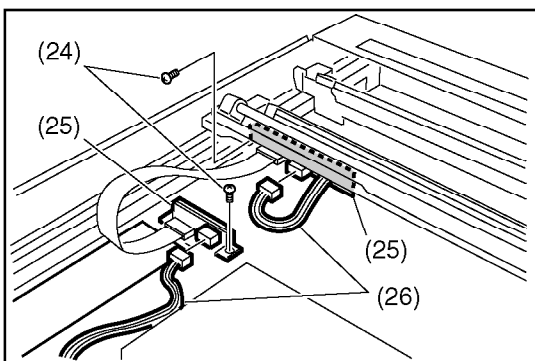


- (19) Disconnect 2 **Harnesses** (1805, 1851) on the  
Inverter PC Board (CN1 and CN2).
- (20) 1 **Screw** (19).
- (21) Remove the **Inverter Upper Cover** (508).



(22) 2 **Screws** (19).

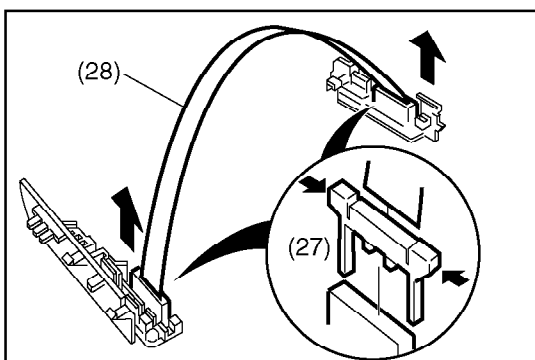
(23) Remove the **Inverter PC Board** (564).



(24) 2 **Screws** (19).

(25) Remove **LFB PC Board** (1414) Assembly and **LFB PC Board** (1414).

(26) Disconnect the **Harness** on the LFB PC Board.

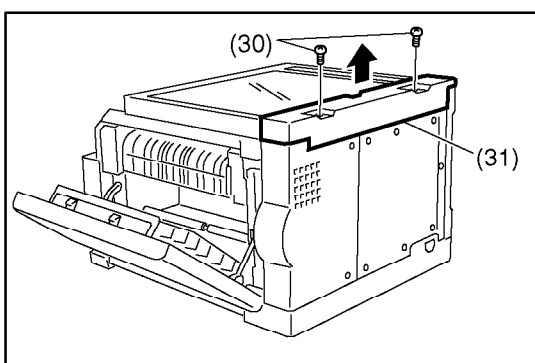


(27) Remove 2 **Sliders** on the Connectors.

(28) Remove the **FPC Cable** (260).

**Note:**

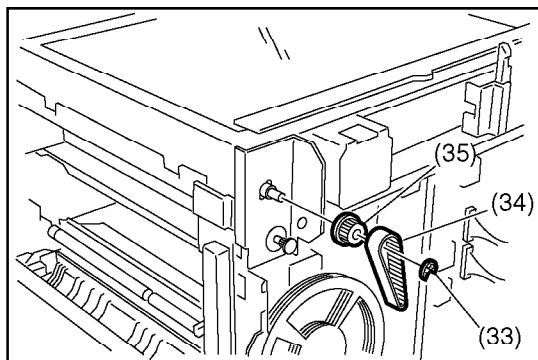
The Sliders must be re-installed when reassembling.



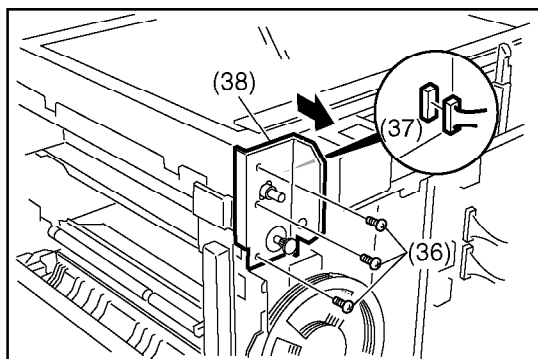
(29) Remove the ADF Unit. (Refer to 2.2.2.)

(30) 2 **Silver Screws** (B1).

(31) Remove the **Rear Platen Cover** (114).

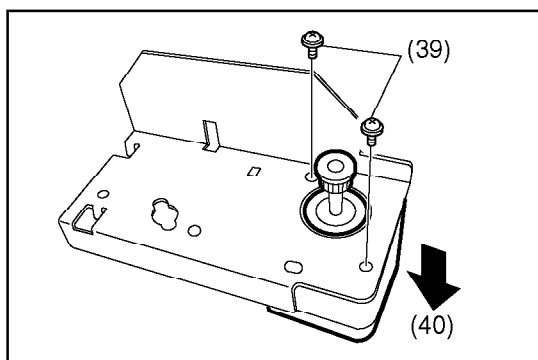


- (32) Remove the Rear Cover and Rear Plate.  
(Refer to 2.2.3.)
- (33) Remove the **E-Ring** (5Y).
- (34) Remove the **Synchronous Belt** (118).
- (35) Remove the **MXL34 Pulley** (119).

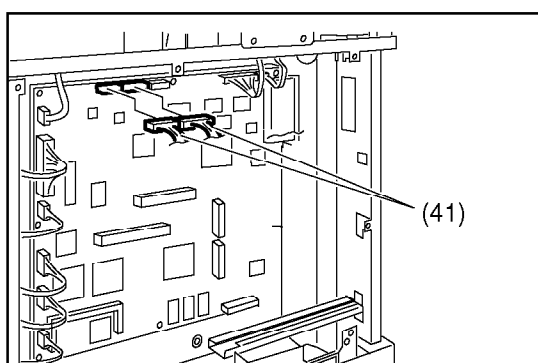


- (36) 3 **Screws** (19).
- (37) Disconnect the **Harness** (1807) on the Scanning Motor.
- (38) Remove the **Scanning Motor Bracket** (120) Assembly.

**Note:**  
When re-installing the Motor Bracket, tighten the upper screw first.

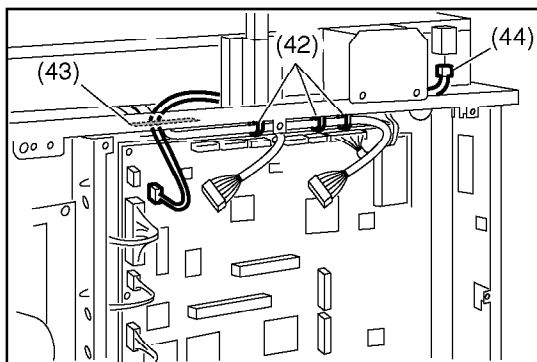


- (39) 2 **Screws** (36).
- (40) Remove the **Scanning Motor** (131).

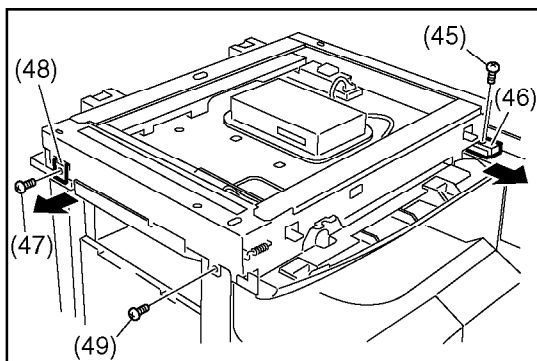


- (41) Disconnect the **Harness** (1831) on the SC PC Board (CN106 and CN120).

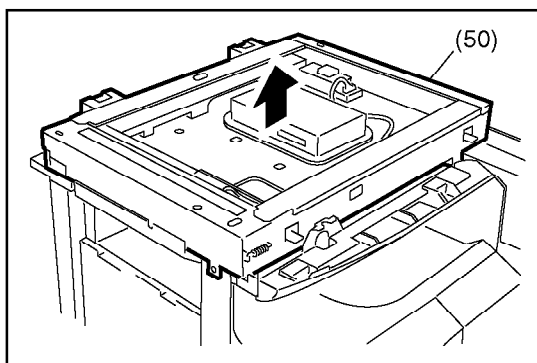




- (42) Release the **Harnesses** from the Clamps.
- (43) Disconnect the **Harness** (1805).
- (44) Disconnect the **Harness** (1803).

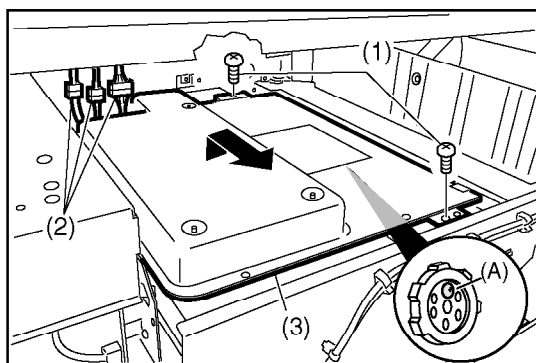


- (45) 1 **Screw** (19).
- (46) Remove the **Front Platen Frame Bracket** (127).
- (47) 1 **Screw** (19).
- (48) Remove the **Rear Platen Frame Bracket** (128).
- (49) 1 **Screw** (19).



- (50) Remove the **Scanner Unit**.

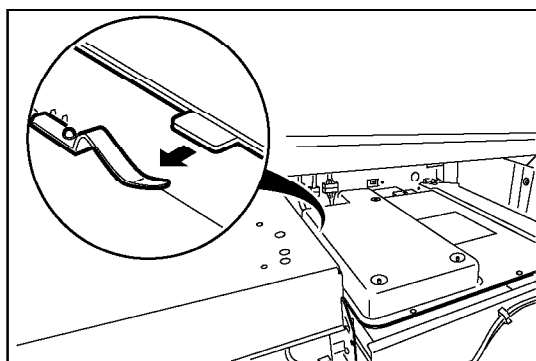
## 2.2.6. LSU, Fan, LVPS, HTC PC Board



- (1) 2 **Screws** (19).
- (2) Disconnect 2 **Harnesses** (1809, 1824).  
(3 connectors)
- (3) Remove the **LSU** (710).

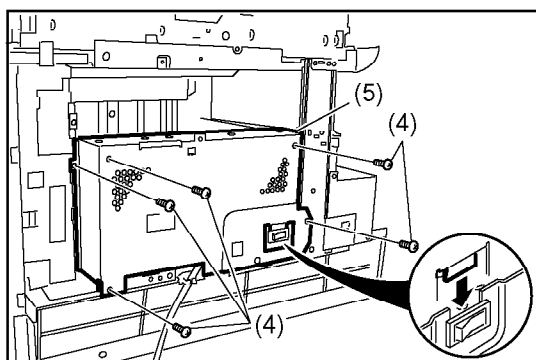
**Note:**

Do not touch the **RED Screw (A)** of LSU Damper as illustrated.



**Note:**

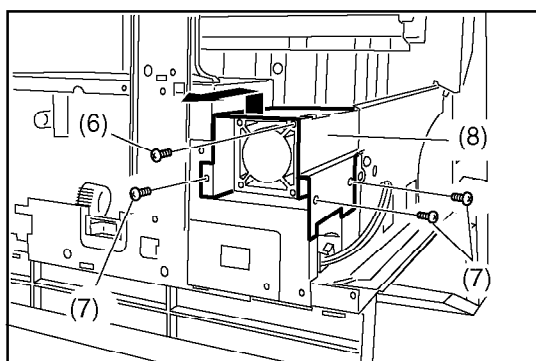
When re-installing the LSU, put the latch under the Plate Spring.



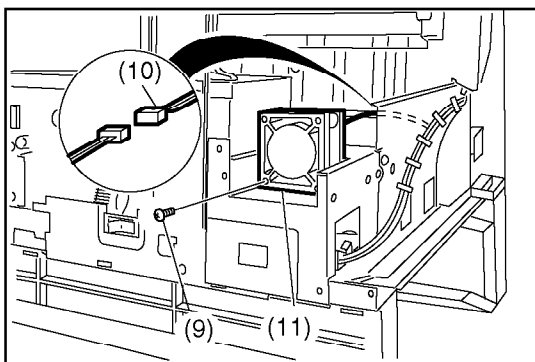
- (4) 5 **Screws** (19).
- (5) Remove the **LVPS Plate** (804) Assembly.

**Note:**

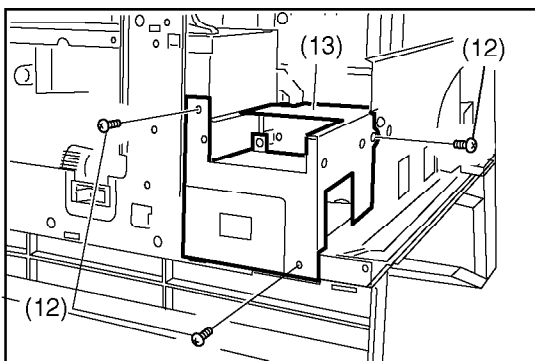
When re-installing the **LVPS Plate** (804) Assembly, make sure that the latch is not over the Power SW.



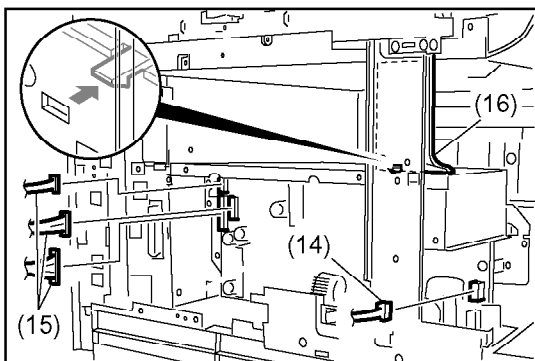
- (6) 1 **Screw** (E5).
- (7) 3 **Screws** (19).
- (8) Remove the **Upper Fan Bracket** (806).



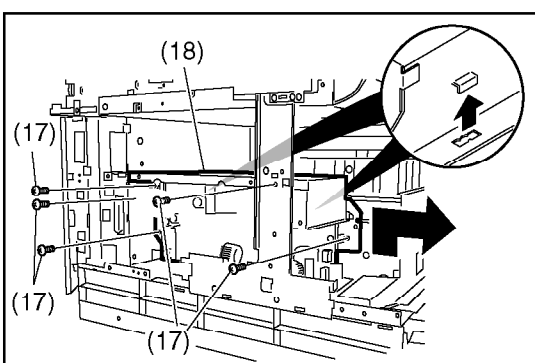
- (9) 1 **Screw** (E5).
- (10) Disconnect the **Harness** (1814).
- (11) Remove the **Fan** (808).



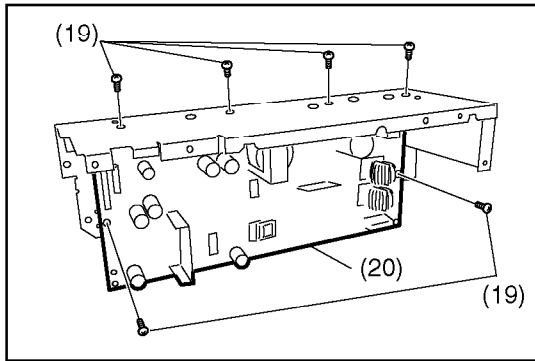
- (12) 3 **Screws** (19).
- (13) Remove the **Lower Fan Bracket** (805).



- (14) Disconnect the **Harness** (1830) on the LVPS (CN60).
- (15) Disconnect 2 **Harnesses** (1812, 1822) on the LVPS (CN61 and CN62).
- (16) Remove the **Inner FL Cover** (110).



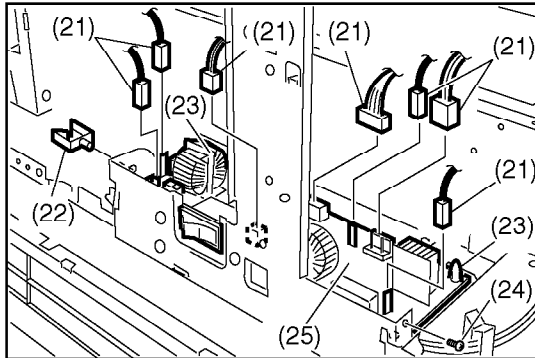
- (17) 5 **Screws** (19).
- (18) Remove the **LVPS Assembly**.



- (19) 6 **Screws** (19).  
(20) Remove the **LVPS** (1404).

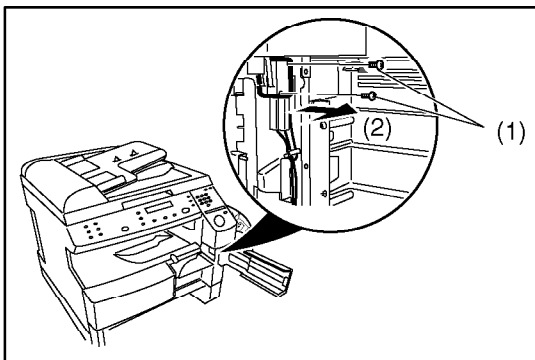
**Note:**

When re-installing the LVPS, install the upper 4  
Screws first and then the remaining 2 Screws.

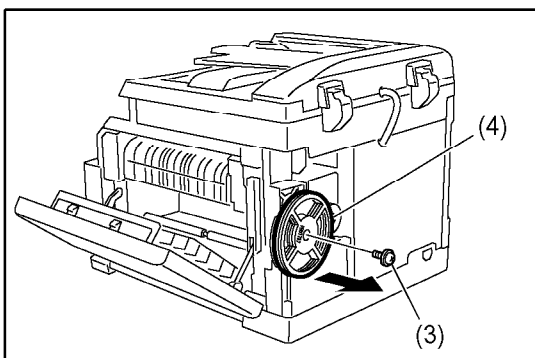


- (21) Disconnect all **Harnesses** on the HTC PC Board  
(CN760, CN761, CN762, CN764, CN765,  
CN766 and CN767).  
(22) Remove the **Clamp** (730).  
(23) Release the **Locking Support C** (728).  
(24) 1 **Screw** (19).  
(25) Remove the **HTC PC Board** (1407).

## 2.2.7. ILS, Fan



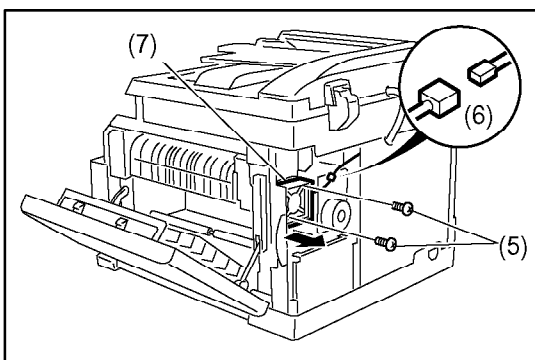
- (1) 2 **Screws** (E6).
- (2) Remove 2 **Micro Switch** (813) and Disconnect 2 **Harnesses** (1823).



- (3) 1 **Screw** (24).
- (4) Remove the 3 **Fly Wheels** (1101).

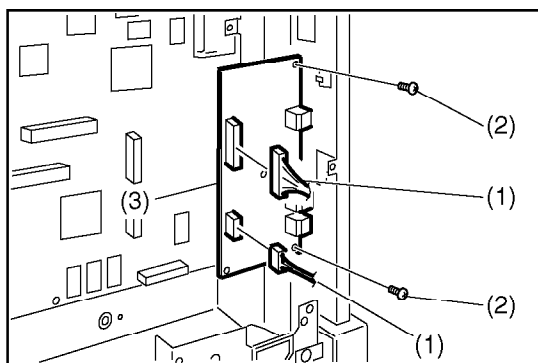
**Note:**

When re-installing the Fly Wheels, make sure that the Imprinted Marks are facing outward.

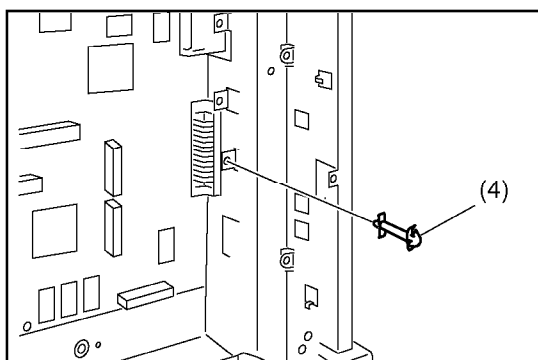


- (5) 2 **Screws** (E5).
- (6) Disconnect the **Harness** (1820).
- (7) Remove the **Fan** (1149).

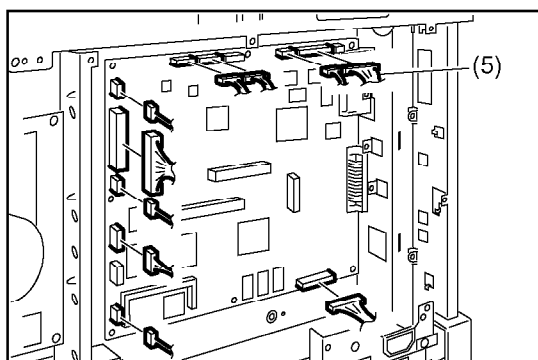
## 2.2.8. SC PC Board, LPC3 PC Board, MJR PC Board (For DP-1810F Only)



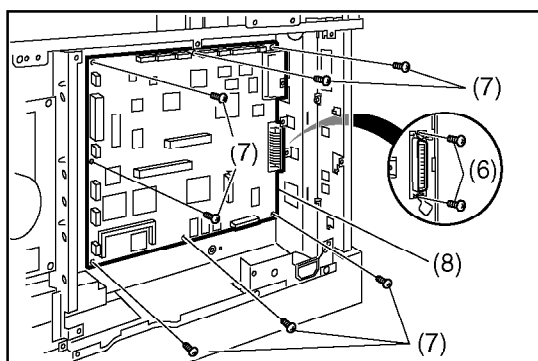
- (1) Disconnect 2 **Harnesses** (1866, 1867)
- (2) 2 **Screws** (19).
- (3) Remove the **MJR PC Board** (1421).



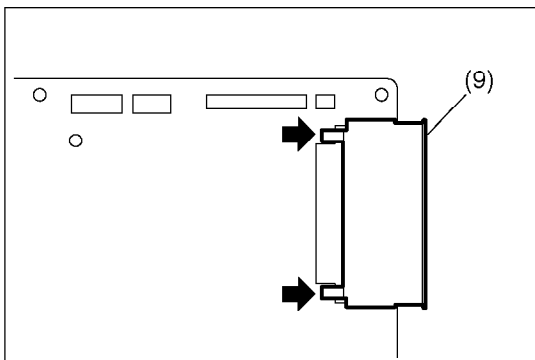
- (4) Remove the **Locking Spacer** (824).



- (5) Disconnect all **Harnesses** on the SC PC Board (1401).



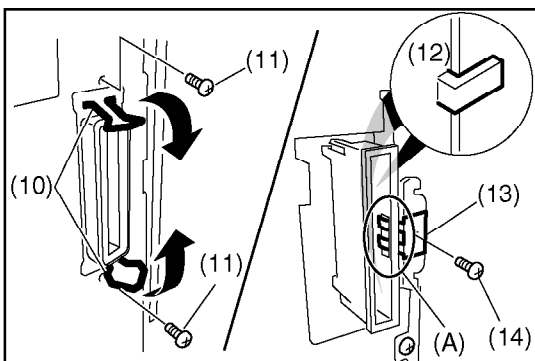
- (6) 2 **Screws** (20).
- (7) 7 **Screws** (19).
- (8) Remove the **SC PC Board** (1401).



**Note:**

When re-installing the SC PC Board.

- (9) Release 2 Latch Hooks and remove the **Card Guide** (816).



- (10) Move 2 **Lock Springs** as illustrated.

- (11) 2 **Screws** (20).

- (12) Reinstall the **Card Guide** (816) as illustrated.

- (13) Position the **Memory Ground Plate** (721) as illustrated.

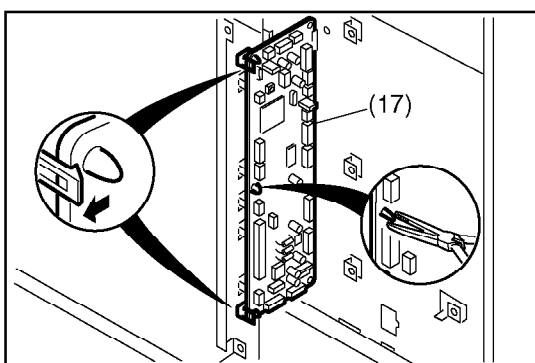
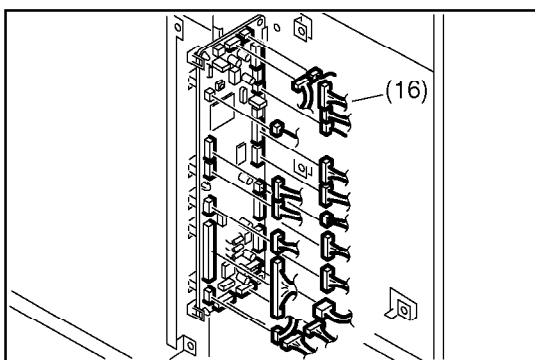
**Note:**

Make sure that the leg of the Memory Ground Plate is properly installed into the hole of the Card Guide as illustrated in (A).

- (14) 1 **Screw** (19).

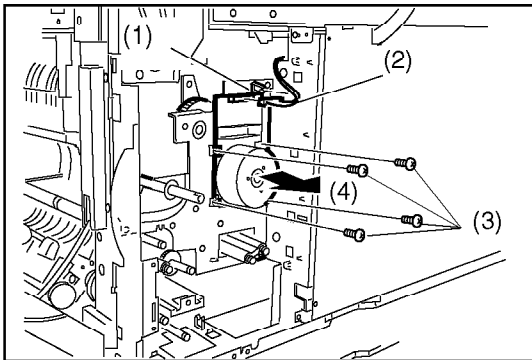
- (15) 7 **Screws** (19).

- (16) Disconnect all **Harnesses** on the LPC3 PC Board.



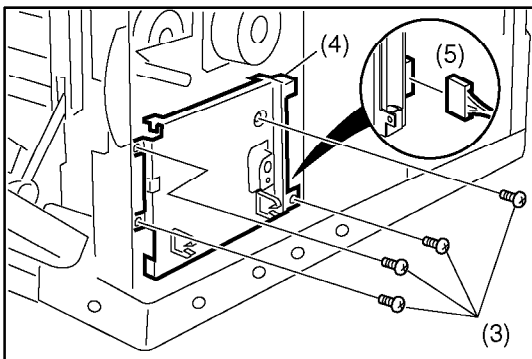
- (17) Release the **Support** and remove the **LPC3 PC Board** (1402).

## 2.2.9. Drive Motor, HVPS, Solenoid, Drive Unit



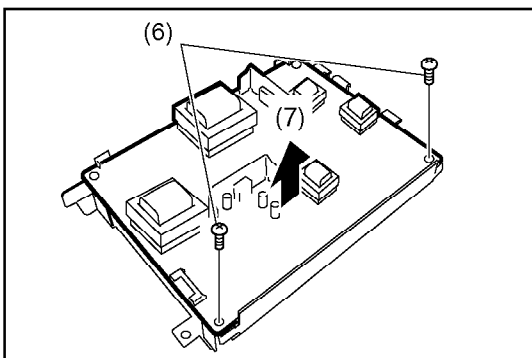
### <Drive Motor>

- (1) Release the **Harness** (1818) from the Clamp.
- (2) Disconnect the **Harness** (1818) on the Drive Motor Assembly.
- (3) 4 **Screws** (19).
- (4) Remove the **Drive Motor**.

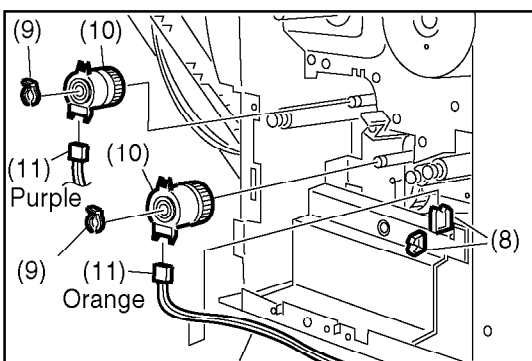


### <HVPS, Solenoid and Drive Unit>

- (1) Remove 3 Fly Wheels. (Refer to 2.2.7.)
- (2) Remove the Harness from the Clamps. (Refer to 2.2.3.)
- (3) 4 **Screws** (19).
- (4) Remove the **HVPS Assembly**.
- (5) Disconnect the **Harness** (1825) on the HVPS (CN800).

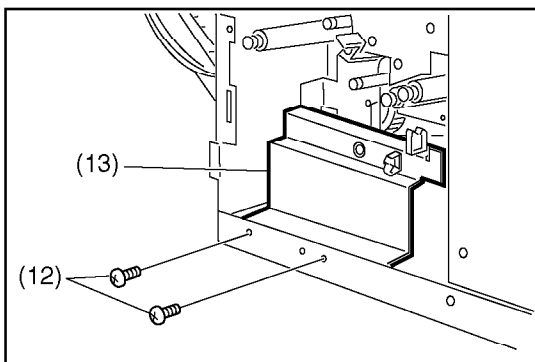


- (6) 2 **Screws** (19).
- (7) Remove the **HVPS** (1403).



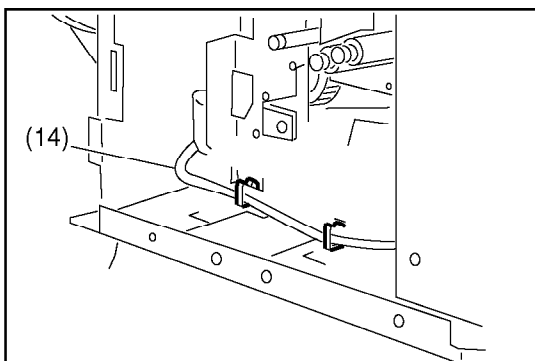
- (8) Release the **Harness** (1826) from the Clamp.
- (9) Remove 2 **Snap Rings** (B9).
- (10) Remove 2 **Clutches** (1141, 1224).
- (11) Disconnect the **Harnesses** (1826). (2 connectors)



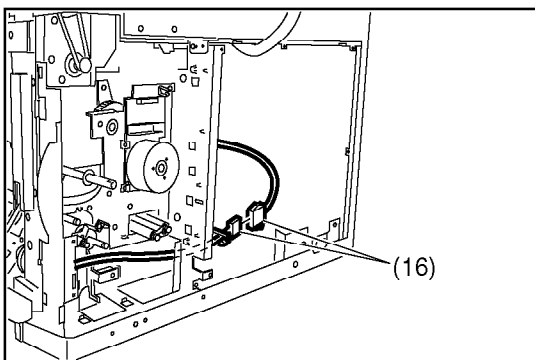


(12) 2 **Screws** (19).

(13) Remove the **CST Cover** (716) Assembly.

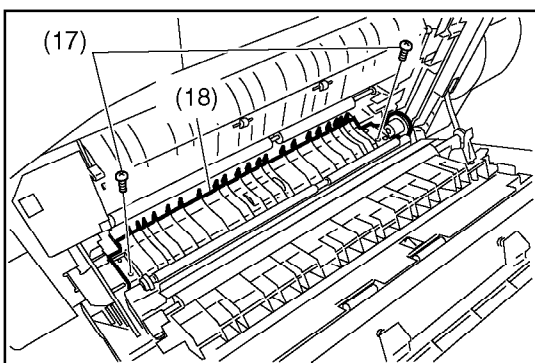


(14) Release the Solenoid **Harness** from 2 Clamps.



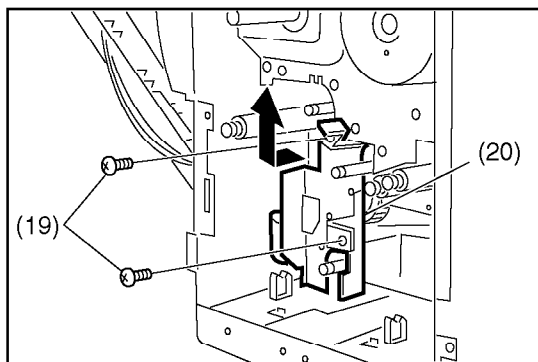
(15) Remove the Rear Plate. (Refer to 2.2.3.)

(16) Release the Solenoid **Harness** from Clamp and Disconnect it.

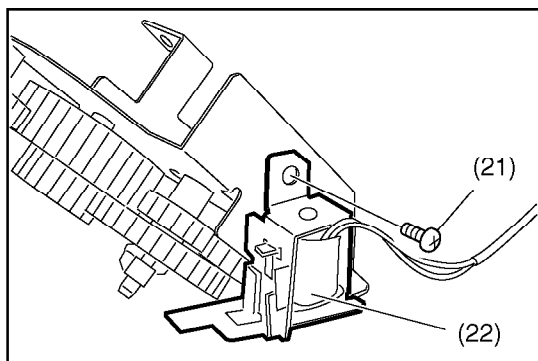


(17) 2 **Screws** (19).

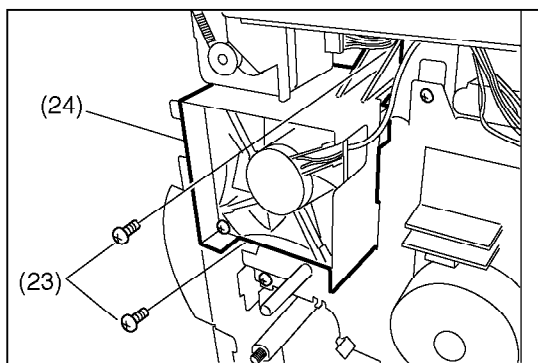
(18) Remove the **Paper Feed Roller** Assembly.



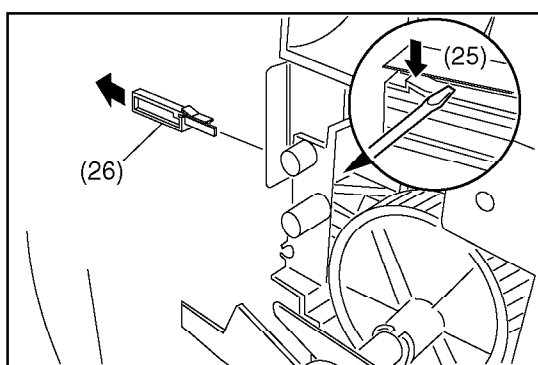
- (19) 2 **Screws** (19).  
(20) Remove the **Solenoid Assembly**.



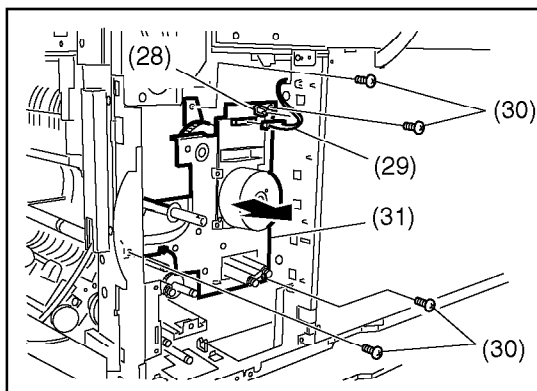
- (21) 1 **Screw** (19).  
(22) Remove the **Solenoid** (1102).



- (23) 2 **Screws** (19).  
(24) Remove the **Fan Assembly**.



- (25) Push down the Latch Hook with a Straight Edge Screwdriver.  
(26) Remove the **Fuser Actuator 2** (1116).



(27) Disconnect the **Harnesses** (1229, 1856) on the LPC3 PC Board.

(28) Release the **Harness** (1818) from the Clamp.

(29) Disconnect the **Harness** (1818) on the Drive Motor Assembly.

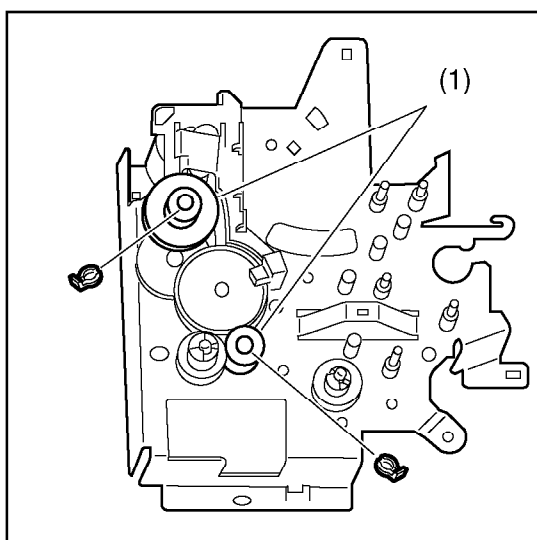
(30) 4 **Screws** (19).

(31) Remove the **Drive Unit**.

**Caution:**

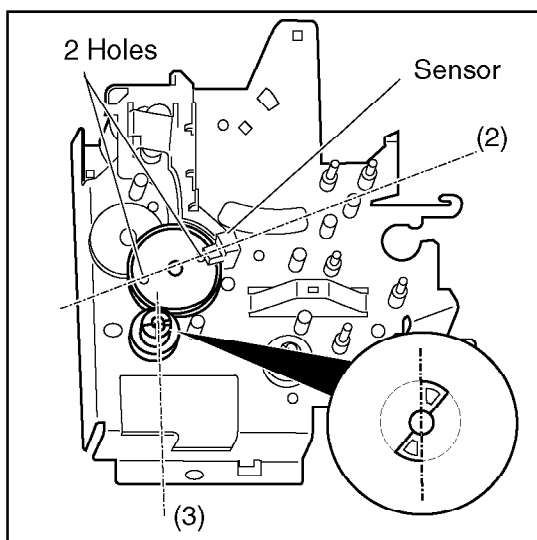
Do not remove the Gears from the Drive Unit.

If dis-assembled or the Alignment is necessary, be careful to assemble the Gears by following steps.



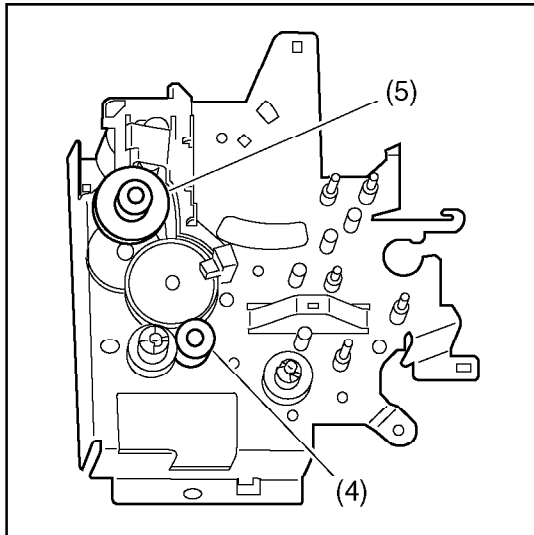
**<Toner Bottle Drive Gear Adjustment>**

(1) Remove 2 **Snap Rings** and 2 **Gears** as illustrated.



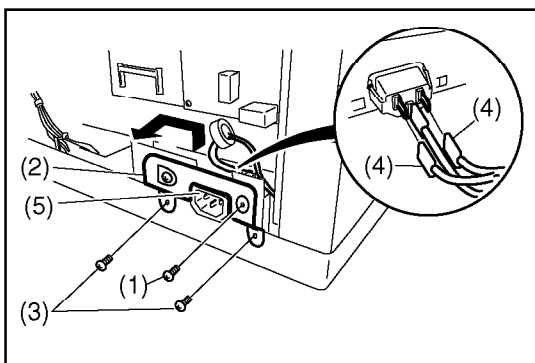
(2) Align 2 Gear Holes with the Sensor.

(3) Align the Joint Gear to the Vertical Position as illustrated.

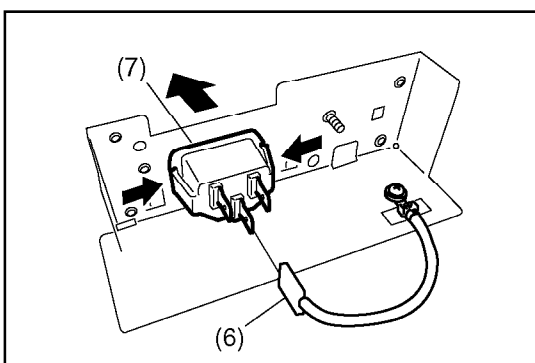


- (4) Install the **Gear** and the **Snap Ring**.
- (5) Install the other **Gear** and **Snap Ring**.

## 2.2.10. AC Inlet

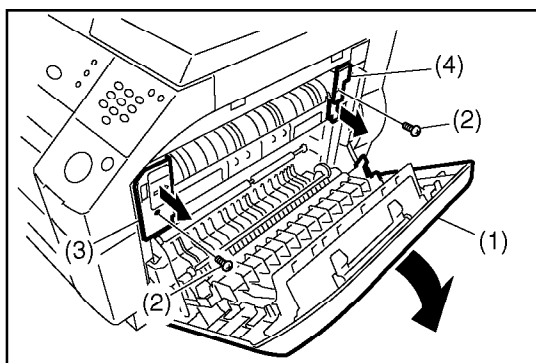


- (1) 1 **Silver Screw** (B1).
- (2) Remove the **Inlet Cover** (751).
- (3) 2 **Screws** (35).
- (4) Disconnect 2 **Harnesses** (1828).
- (5) Remove the **AC Inlet** Assembly.

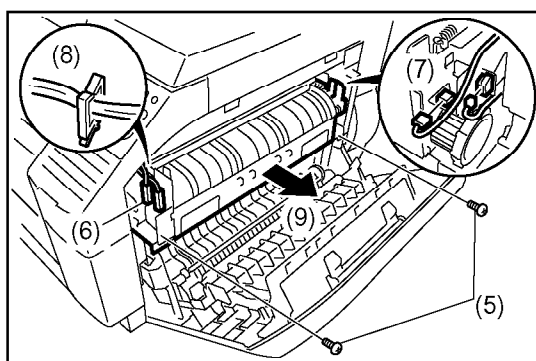


- (6) Disconnect the **Harness** (1842).
- (7) Remove the **AC Inlet** (807).

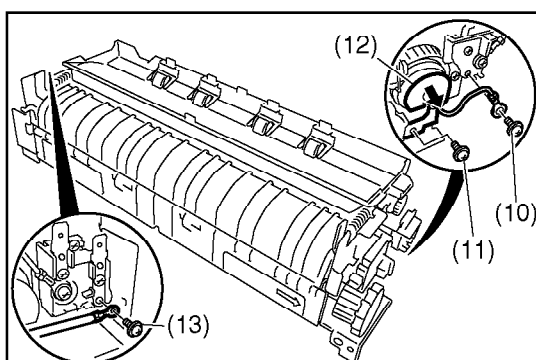
## 2.2.11. Fuser Unit



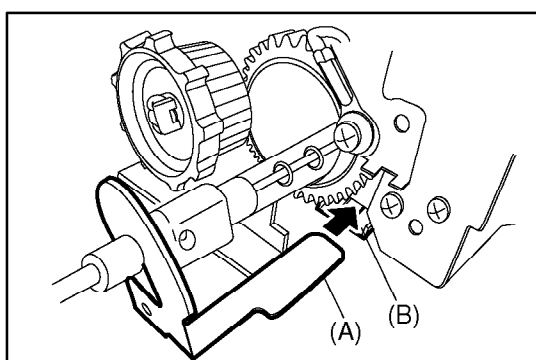
- (1) Open the **Right Cover (601) Assembly**.
- (2) 2 **Screws (19)**.
- (3) Remove the **Front Connector Cover (714)**.
- (4) Remove the **Rear Connector Cover (713)**.



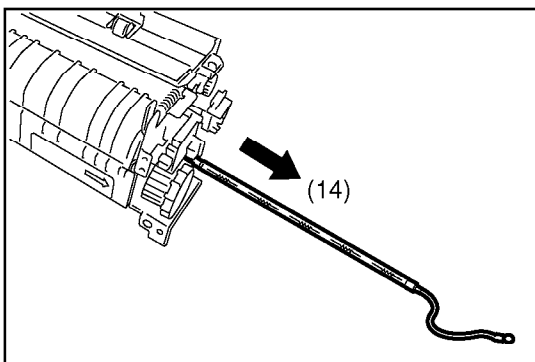
- (5) 2 **Screws (4N)**.
- (6) Remove 2 **Harnesses (1829)**.
- (7) Remove 2 **Harnesses (1813)**.
- (8) Release 2 **Harnesses (1829)** from the Clamp.
- (9) Remove the **Fuser Unit**.



- (10) 1 **Screw (23)**.
- (11) 1 **Screw (19)**.
- (12) Remove the **Lamp Holder (925)**.
- (13) 1 **Screw (23)**. (Opposite side)



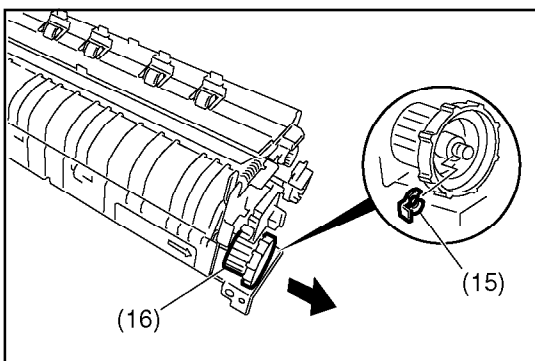
**Note:**  
When re-installing the **Lamp Holder (925)**, insert the Lamp Holder's Leg (A) into the Guide (B).



(14) Remove the **Fuser Lamp** (924).

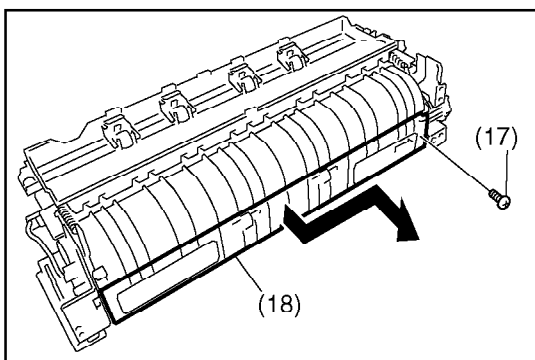
**Note:**

Do not Touch the glass portion of the Fuser Lamp with bare hands. Grease from finger prints will shorten its life cycle, use isopropyl alcohol to clean finger prints.



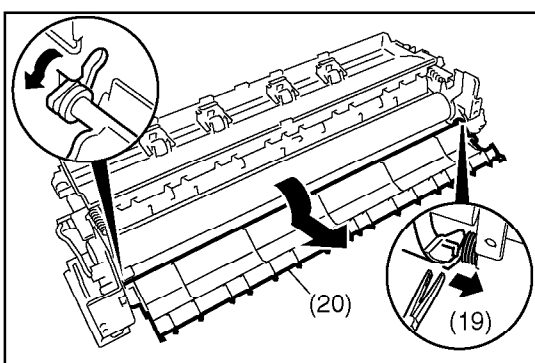
(15) Remove the **Snap Ring** (B9).

(16) Remove the **Jam Release Knob** (934).



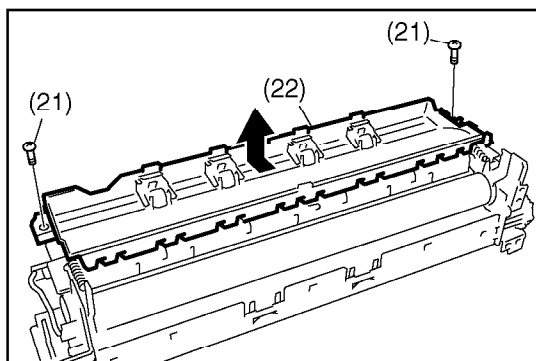
(17) 1 **Screw** (19).

(18) Remove the **Right Side Cover** (904).



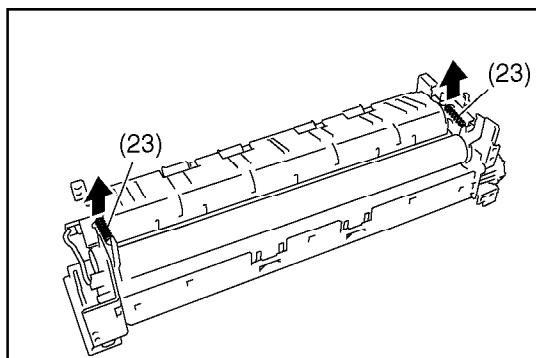
(19) Release the **Jam Release Guide Spring** (926).

(20) Remove the **Jam Release Guide** (903).

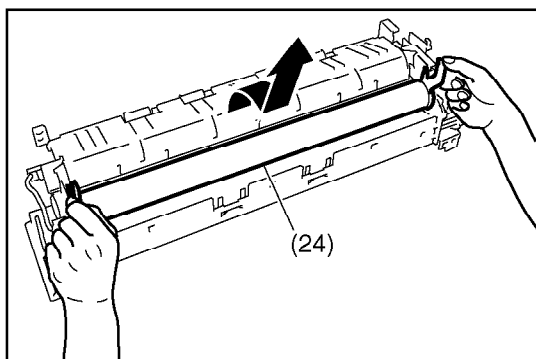


(21) 2 **Screws** (G5).

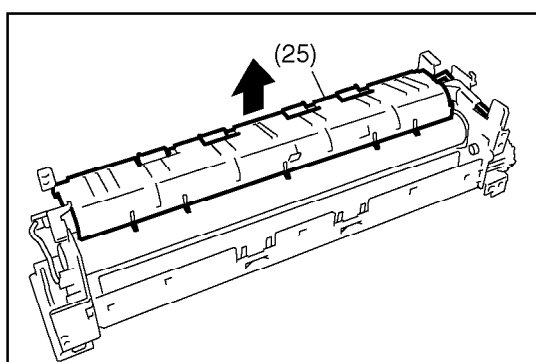
(22) Remove the **Exit Upper Guide** (901).



(23) Remove 2 **Pressure Springs** (952).



(24) Remove the **Pressure Roller** (914).

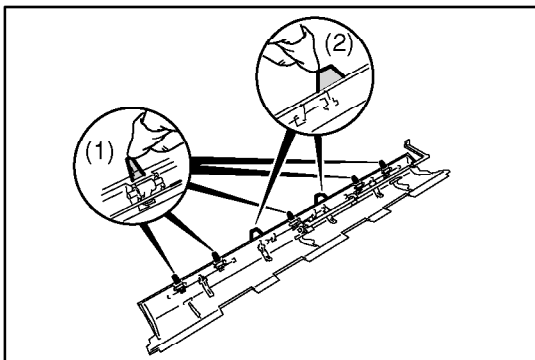


(25) Remove the **Exit Lower Guide** (902).



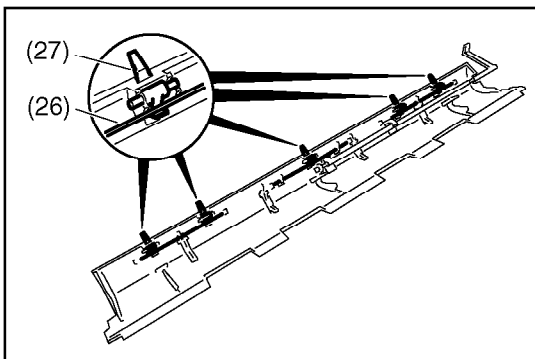
### <Cleaning Separator>

- (1) Clean the Separators with a soft cloth, saturated with isopropyl alcohol.
- (2) Clean 2 Separation HR Sheets with a soft cloth, saturated with isopropyl alcohol.

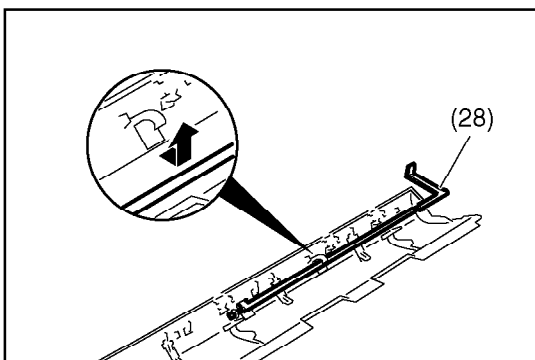


(26) Remove 3 **Separator Springs** (953).

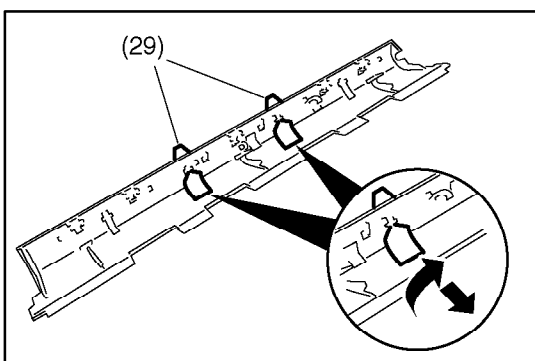
(27) Remove 5 **Separators** (923).

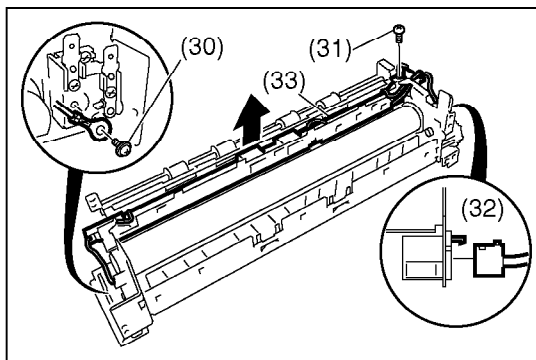


(28) Remove the **Exit Lever** (921).

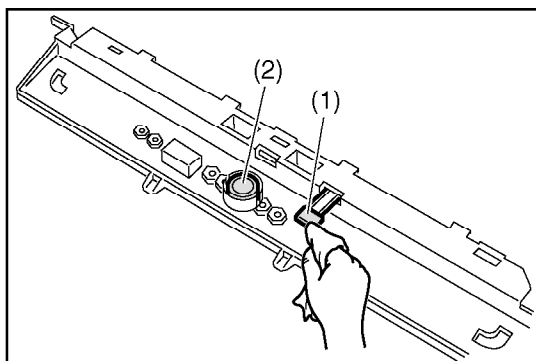


(29) Remove 2 **Separation HR Sheets** (970).



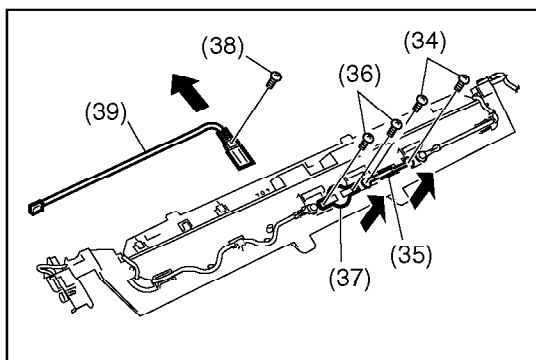


- (30) 1 **Screw** (23).
- (31) 1 **Screw** (19).
- (32) Release the **Stopper** and disconnect the **Harness**.
- (33) Remove the **Harness Guide** (906).

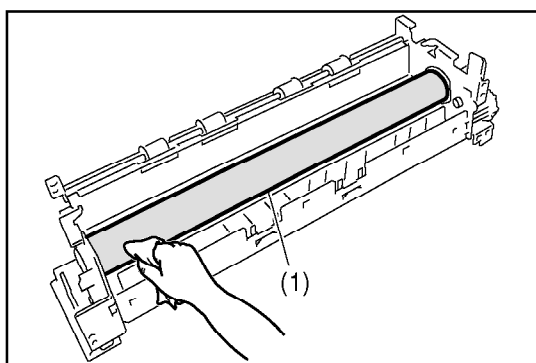


#### <Cleaning Thermistor Assembly, Thermostat>

- (1) Clean the **Thermistor Assembly** (944) with a soft cloth, saturated with isopropyl alcohol.
- (2) Clean the **Thermostat** (947) with a soft cloth, saturated with isopropyl alcohol.

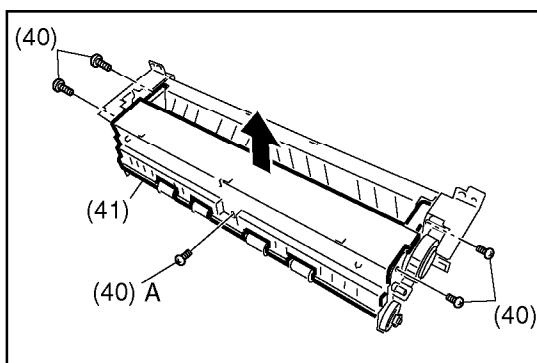


- (34) 2 **Screws** (23).
- (35) Remove the **Thermal Fuse** (948).
- (36) 2 **Screws** (23).
- (37) Remove the **Thermostat** (947).
- (38) 1 **Screw** (1Y).
- (39) Remove the **Thermistor Assembly** (944).



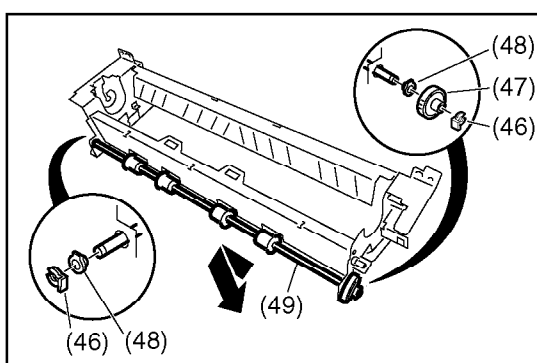
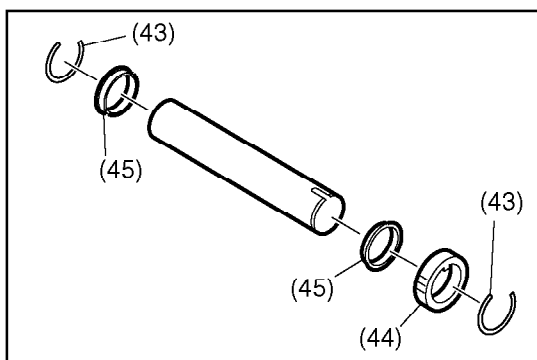
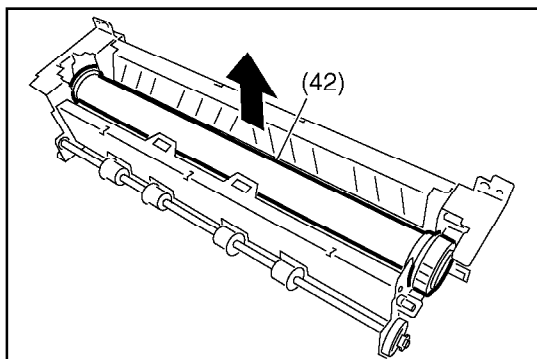
#### <Cleaning the Fuser Roller>

- (1) Clean the **Fuser Roller** (913) with a soft cloth, saturated with isopropyl alcohol.

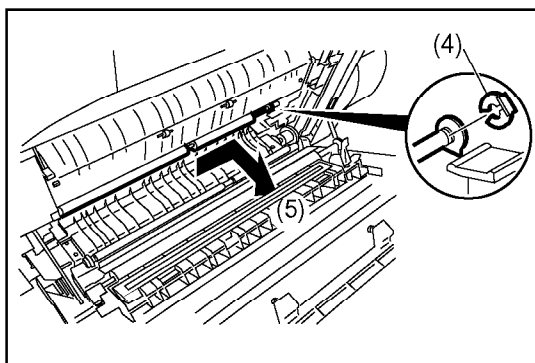


**Note:**

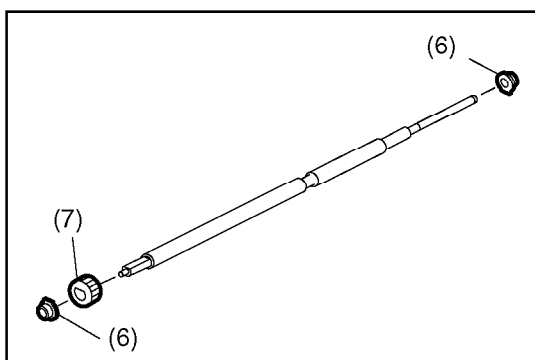
When re-installing, install the Screw A first, then the remaining 4 Screws.



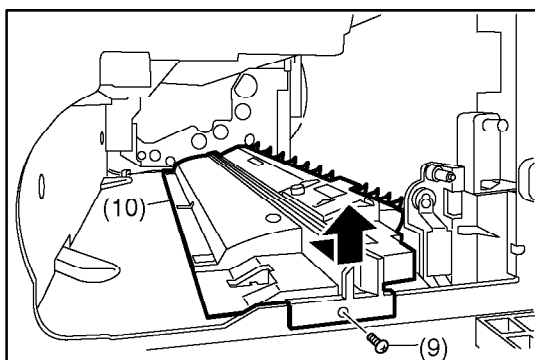
## 2.2.12. Registration Roller, Toner Sensor



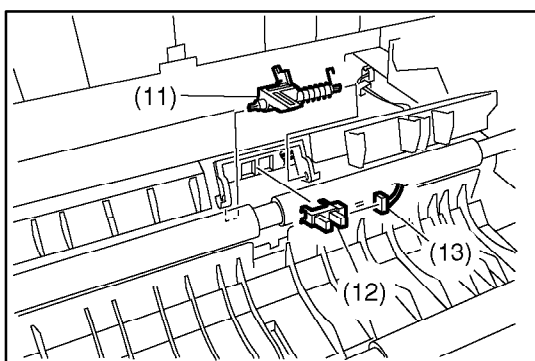
- (1) Remove the Rear Cover. (Refer to 2.2.3.)
- (2) Remove 3 Fly Wheels. (Refer to 2.2.7.)
- (3) Remove the HVPS, Snap Ring and Clutch. (Refer to 2.2.9.)
- (4) Remove the **Snap Ring** (B9).
- (5) Remove the **Registration Roller** (1162).



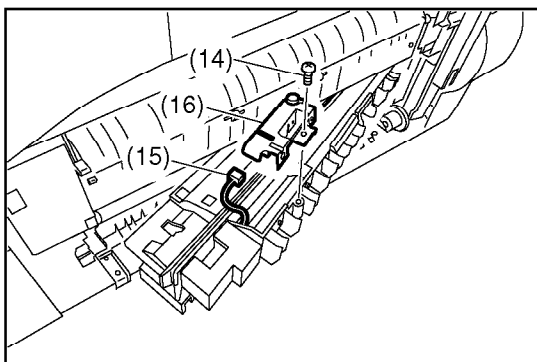
- (6) Remove 2 **Bushings** (939, 1144).
- (7) Remove the **D17 D Gear** (1143).



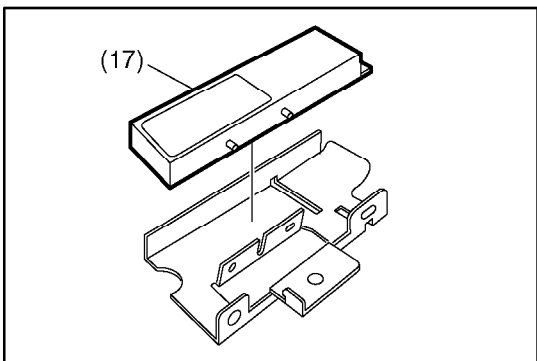
- (8) Remove the Front Cover and Right Cover Assembly. (Refer to 2.2.3.)
- (9) 1 **Screw** (19).
- (10) Remove the **Process Unit Guide** (1142).



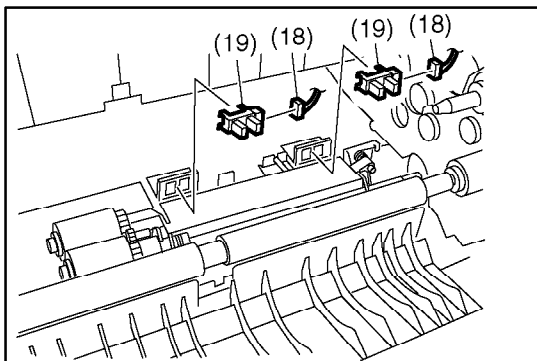
- (11) Remove the **Registration Actuator** (1146).
- (12) Remove the **Photo Sensor** (604).
- (13) Remove the **Harness** (1827).



- (14) 1 **Screw** (19).
- (15) Disconnect the **Harness** (1827).
- (16) Remove the **Toner Sensor Spring** (1148).

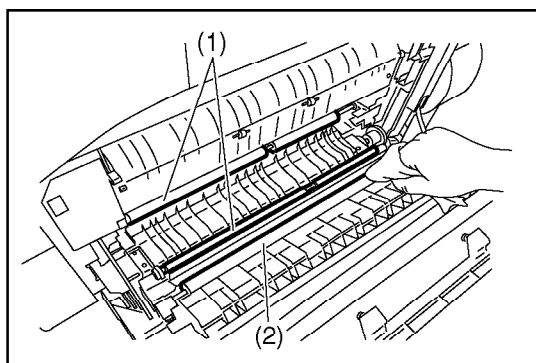


- (17) Remove the **Toner Sensor** (1147).



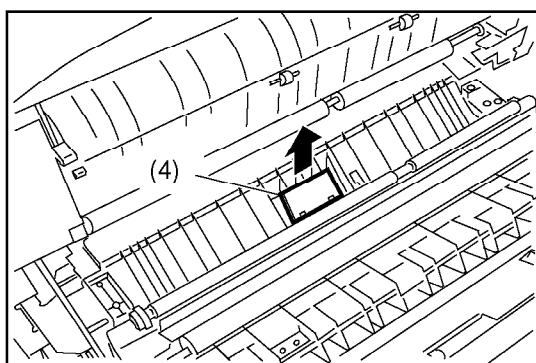
- (18) Disconnect the **Harness** (1827).
- (19) Remove 2 **Photo Sensors** (604).

## 2.2.13. Bias Transfer Roller



### <Cleaning the Registration Roller, Duplex Transfer Roller and Pinch Roller>

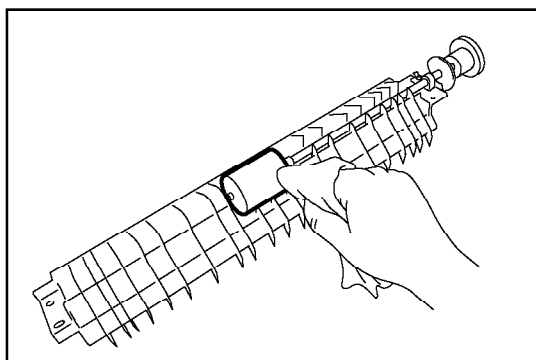
- (1) Clean the **Registration Roller**, **Duplex Transfer Roller** and **Pinch Roller** with soft cloth, saturated with isopropyl alcohol.
- (2) Clean the **Bias Transfer Roller** with soft dry Cloth.



- (3) Remove the Paper Feed Roller Assembly.  
(Refer to 2.2.9.)
- (4) Remove the **Separation Pad** (659).

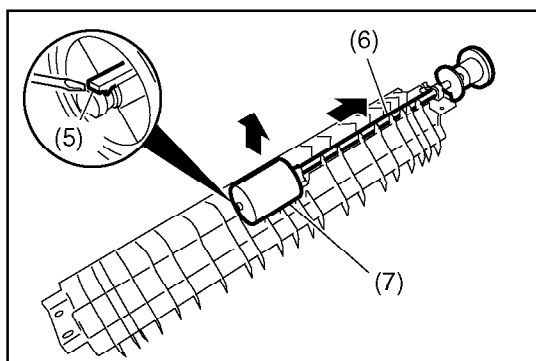
### <Turning over the Separation Pad>

To improve separation, turn over the **Separation Pad**.

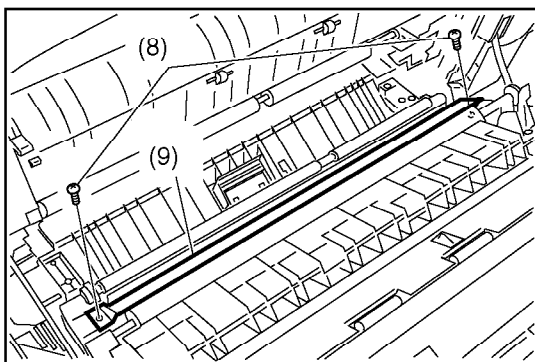


### <Cleaning the Paper Feed Roller>

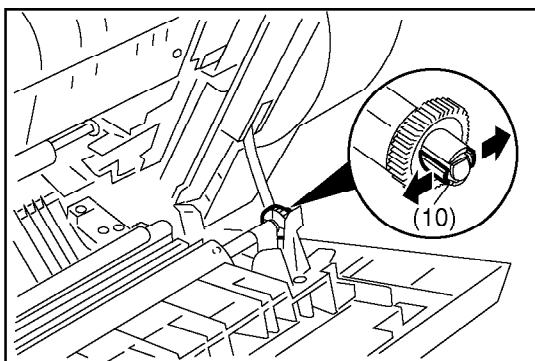
Clean the **Paper Feed Roller** with soft cloth, saturated with isopropyl alcohol.



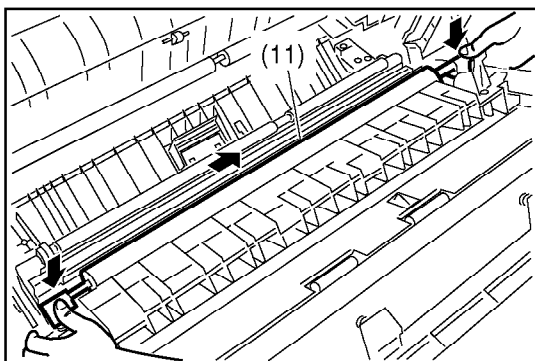
- (5) Release the **Latch Hook** with a small screwdriver.
- (6) Remove the **Feed Roller Shaft** (677).
- (7) Remove the **Paper Feed Roller** (679).



- (8) 2 **Screws** (C8).  
(9) Remove the **BTR Guide** (642).

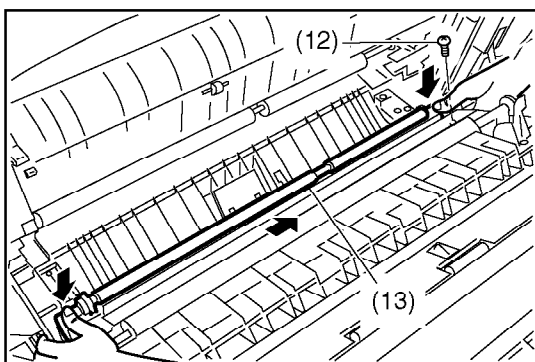


- (10) Release 2 **Latch Hooks** and remove the **BTR Gear** (644).



- (11) Remove the **Bias Transfer Roller** (648).

**Note:**  
When re-installing the **Bias Transfer Roller** (648), make sure that the **Springs** are on both sides, the **White Bushing** is in front and the **Black Bushing** is in rear.



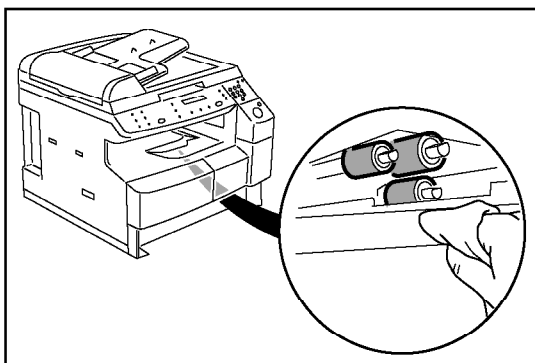
- (12) 1 **Screw** (C8).  
(13) Remove the **Timing Pinch Roller** (647).



(14) Remove the **Cleaner Roller** (640).

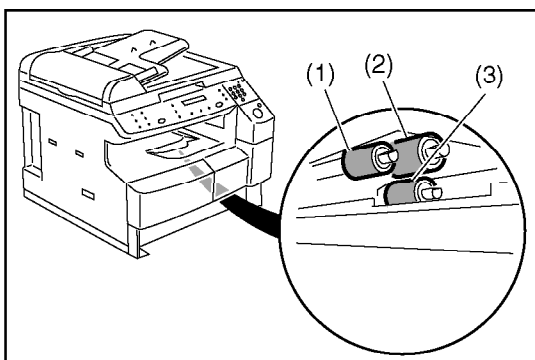


## 2.2.14. Paper Feed Module



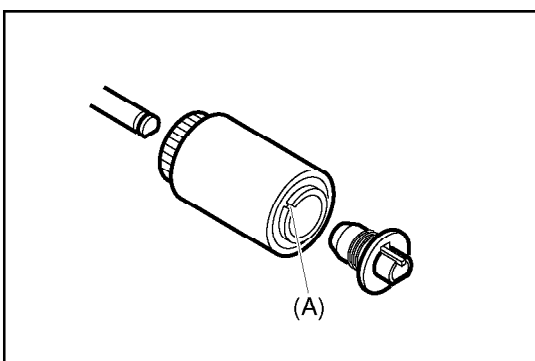
### <Cleaning the Paper Feed Roller and C25 Gear Roller>

Clean the Paper Feed Roller and C25 Gear Roller with soft cloth, saturated with isopropyl alcohol.

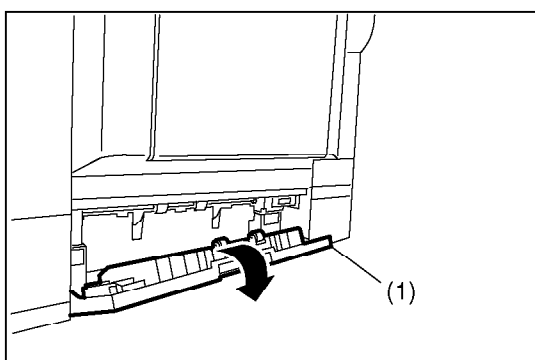


- (1) Release the Latch hook and remove the **C25 Gear Roller** (1207) and **Reverse Clutch** (1212).
- (2) Remove the **Feed Roller** (1213).
- (3) Remove the **C25 Gear Roller** (1207) and **Reverse Clutch** (1212).

**Note:**  
2nd/3rd/4th Paper Feed Modules are as the same steps (1)~(3).

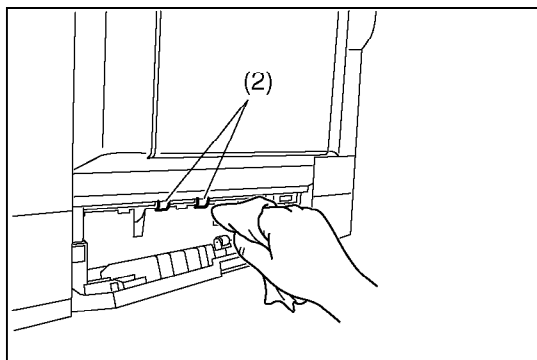


**Note:**  
When re-installing the **C25 Gear Roller** (1207) removed in step (3), insert the edge of Clutch Spring into the groove of Roller.



### <Cleaning the Intermediate Roller of 2nd/3rd/4th Paper Feed Module>

- (1) Open the **Jam Cover** (1626).

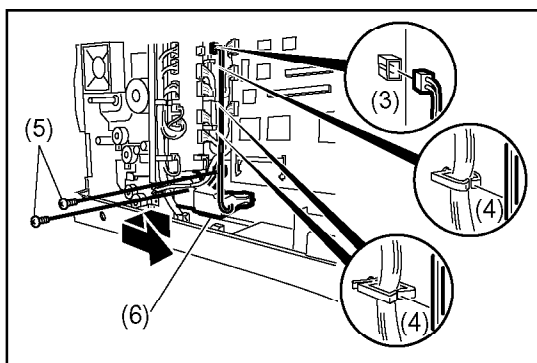


(2) Clean the **Intermediate Roller** (1617).

**Note:**

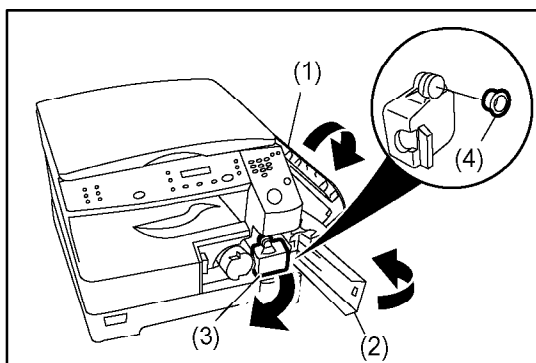
3rd/4th Paper Feed Modules are as the same steps (1)~(2).

### 2.2.15. Lift Motor Assembly

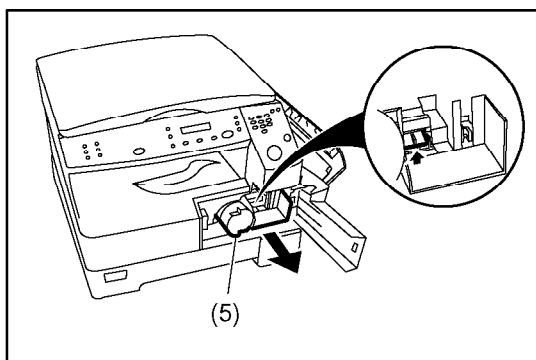


- (1) Remove 3 Fly Wheels. (Refer to 2.2.7.)
- (2) Remove the HVPS. (Refer to 2.2.9.)
- (3) Disconnect the **Harness** on the LPC3 PC Board (CN706).
- (4) Release the **Harness** from the Clamps.
- (5) 2 **Screws** (19).
- (6) Remove the **Lift Motor Assembly** (1238).

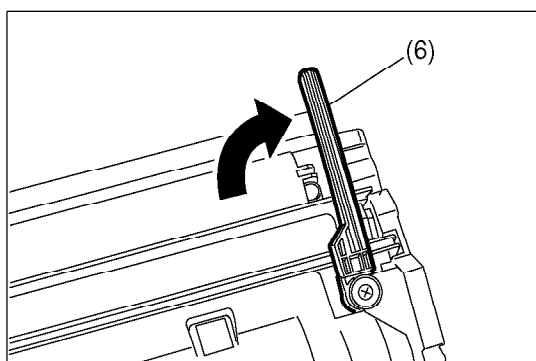
## 2.2.16. Process Unit



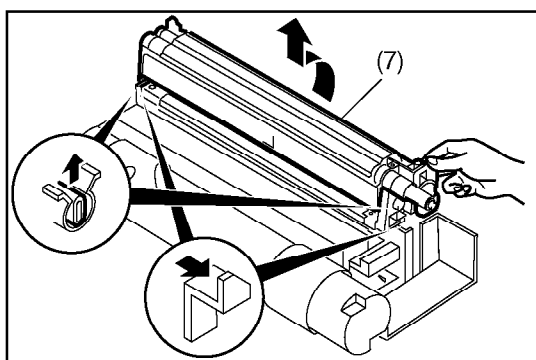
- (1) Open the **Right Cover**.
- (2) Open the **Front Door Cover**.
- (3) Remove the **Toner Waste Container** by slowly pulling it towards the left as illustrated.
- (4) Seal the Container with the enclosed cap and dispose of it properly.



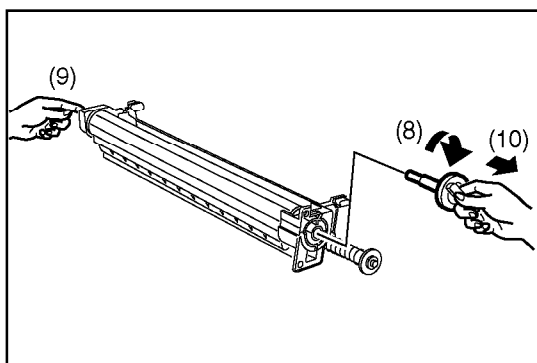
- (5) Lift the **Release Latch** (White) and remove the **Process Unit**.



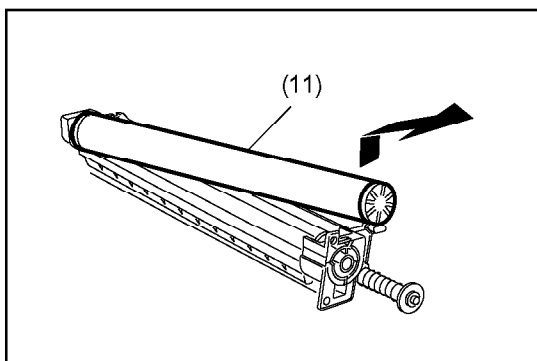
- (6) Open the bottom Leg as illustrated.



- (7) Release 2 **OPC Latches** (1044, 1045) and turn the OPC Drum Assembly in the direction of the arrow.



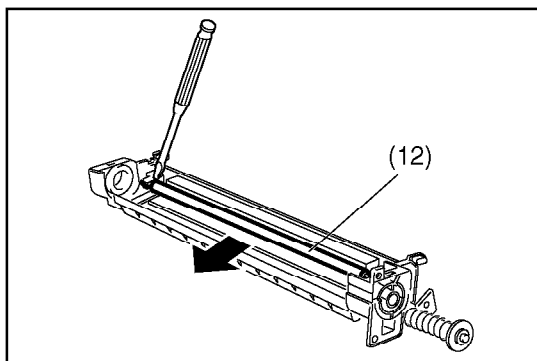
- (8) Unlock the **Front OPC Bushing Assembly** (1003, 1023) by turning it clockwise.
- (9) Push the OPC Drum forward from the rear end as illustrated.
- (10) Remove the **Front OPC Bushing Assembly** (1003, 1023).



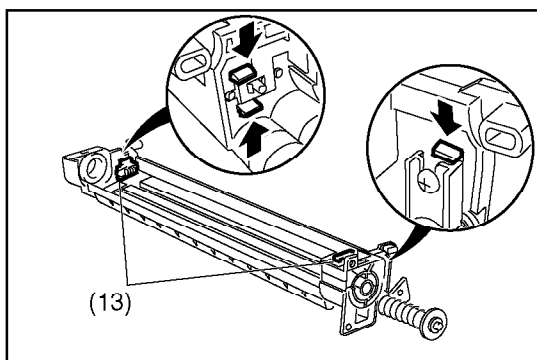
- (11) Lift the **OPC Drum** (1001) as illustrated, holding the right side where the Front OPC Bushing Assembly was installed.

**Note:**

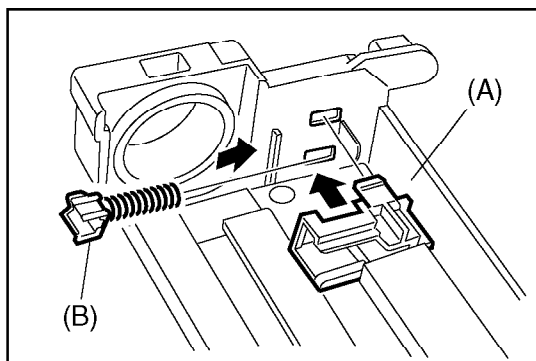
Do not touch the surface of the OPC Drum with bare hands when removing or re-installing it. Grease from fingerprints will affect copy quality. When installing a new OPC Drum, clean the Bias Charge Roller with a soft dry cloth.



- (12) Remove the **Bias Charge Roller** (1036).

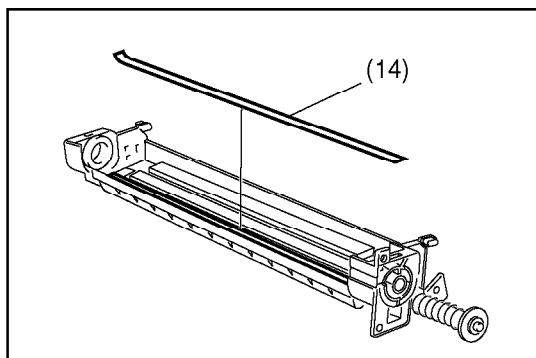


- (13) Remove the **Bias Charge Roller Holder Assembly** (1037, 1038, 1039).

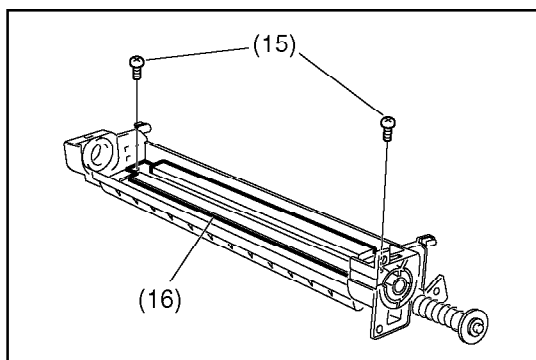


**Note:**

When re-installing the Bias Charge Roller Holder Assembly, install the **Charge Holder** (1037) first as shown in (A) and then the **Charge Bushing** (1038) with the **Charge Spring** (1039) as shown in (B).

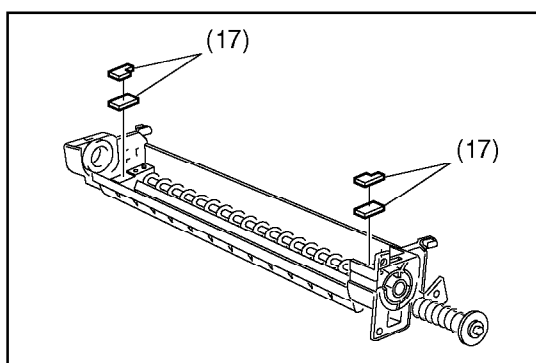


(14) Remove the **Scoop Sheet** (1033).

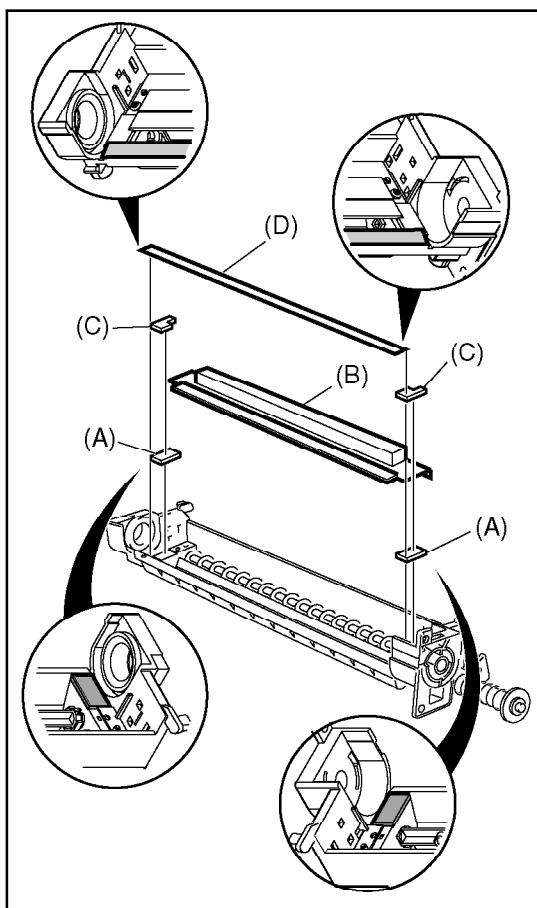


(15) 2 **Black Screws** (B4).

(16) Remove the **Cleaning Blade Assembly** (1035).

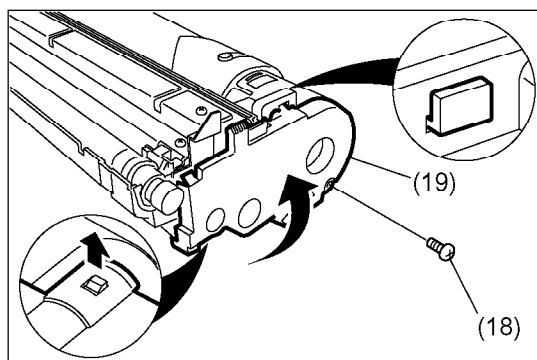


(17) Remove **Front Cleaning Felt** (1031), **Rear Cleaning Felt** (1032) and 2 **Cleaning Sponges** (1030).



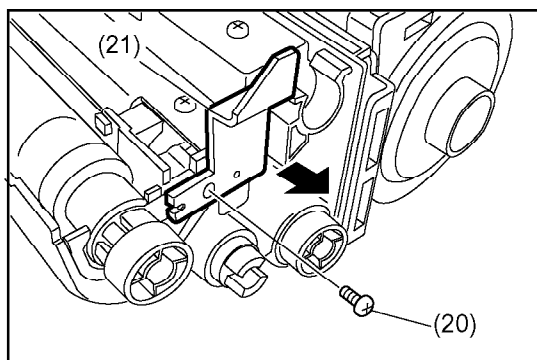
**Note:**

1. When re-installing, install 2 CL Sponges (1030) first as shown in (A), then the CL Blade Assembly (1035) next as shown in (B), then the Front CL Felt (1031) and Rear CL Felt (1032) as shown in (C) and lastly attach the Scoop Sheet (1033) as shown in (D).
2. When re-installing the CL Felts, make sure that there is no space between the rubber part of the CL Blade Assembly and the CL Felts as illustrated.
3. When re-installing the CL Sponges and the Scoop Sheet, attach them flat aligning with the edge of the Front OPC Bushing Assembly as illustrated.



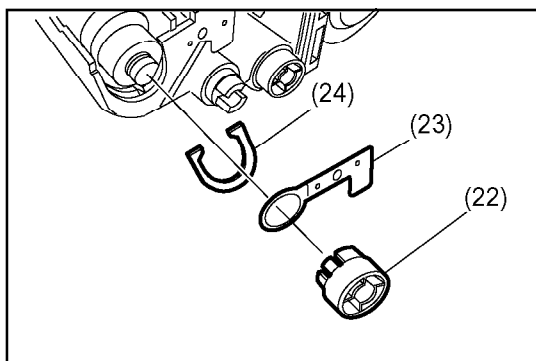
(18) 1 **Black Screw** (B4).

(19) Remove the **Rear Hopper Cover** (1011).

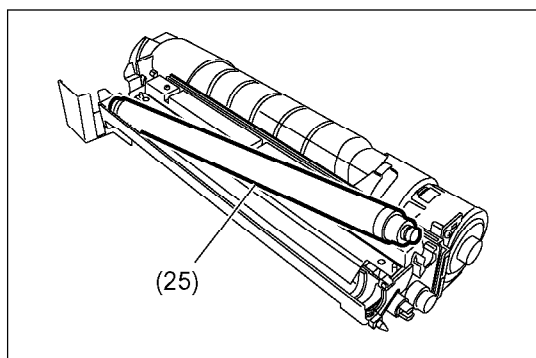


(20) 1 **Black Screw** (B4).

(21) Remove the **Rear OPC Latch** (1045).



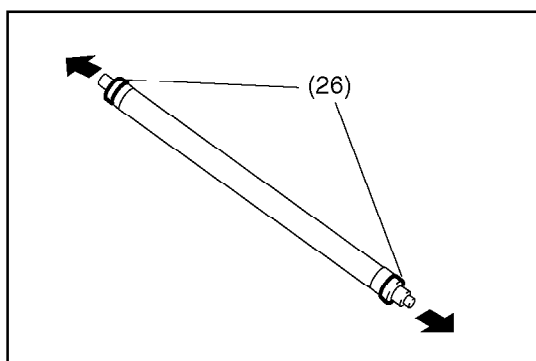
- (22) Remove the **Mag Roller Joint** (1047).
- (23) Remove the **Charge Plate D** (1059).
- (24) Remove the **Mag Roller Stopper** (1046) by gently pushing it downwards.



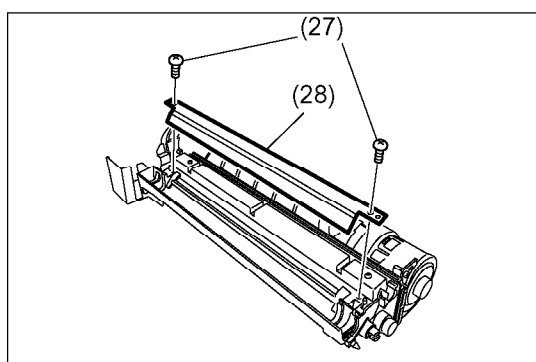
- (25) Remove the **Mag Roller** (1048).

**Note:**

1. Do not touch the surface of the Mag Roller.
2. When removing or re-installing, place the Mag Roller on a cloth or paper and handle it with care.

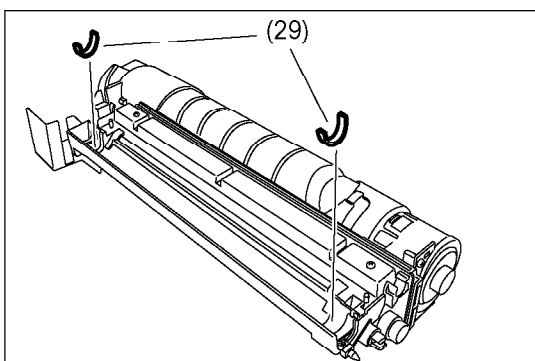


- (26) Remove the **Gap Rollers** (1049).



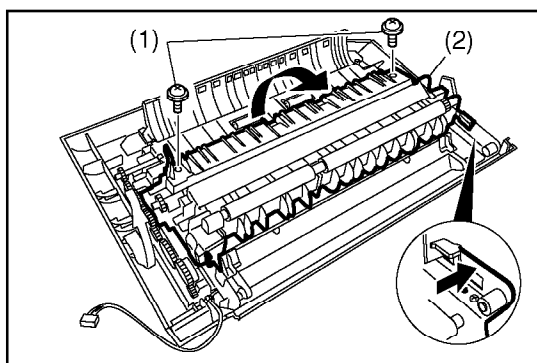
- (27) 2 **Black Screws** (B4).
- (28) Remove the **Dr. Blade Assembly** (1040).



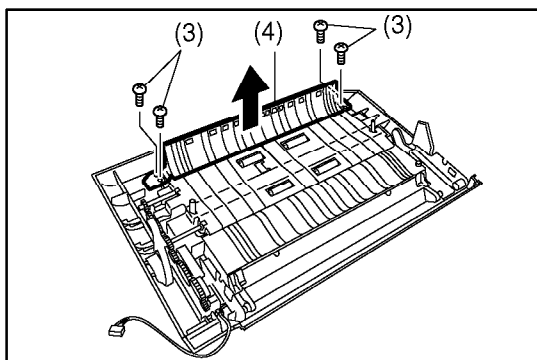


(29) Remove 2 **Developer Felts** (1041).

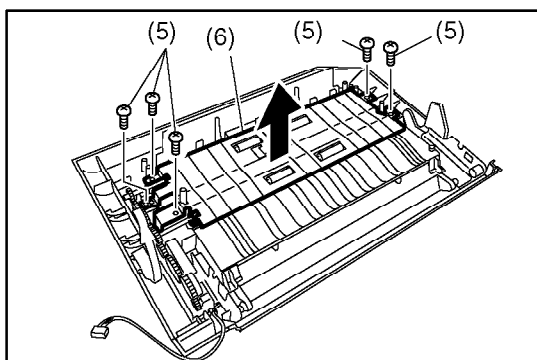
## 2.2.17. Duplex Feed Roller (For DP-2010E Only)



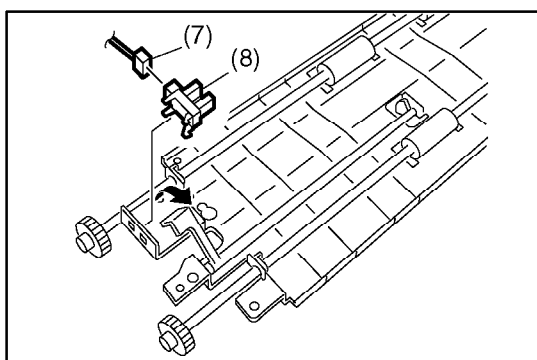
- (1) 2 **Screws** (C8).
- (2) Remove the **Transfer Guide** (639) Assembly.



- (3) 4 **Screws** (19).
- (4) Remove the **Duplex Guide 3** (675).



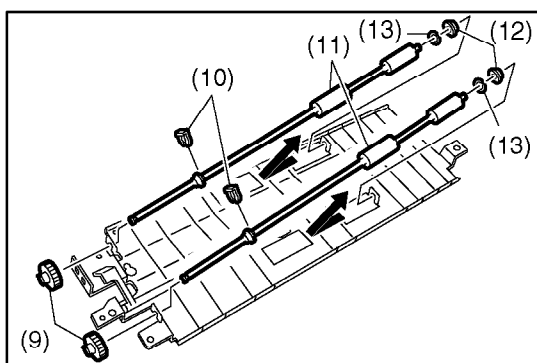
- (5) 5 **Screws** (19).
- (6) Remove the **Duplex Guide 1** (602) Assembly.



- (7) Disconnect the **Harness** (1844).
- (8) Remove the **Photo Sensor** (604) lifting the **Paper Actuator** (606).



































**Note:**

When re-installing, make sure that Photo Sensor is re-installed properly.



- (9) Remove 2 **E15 D Gears** (607).
- (10) Remove 2 **Snap Rings** (B9).
- (11) Remove 2 **Duplex Feed Rollers** (609).
- (12) Remove 2 **Bushings** (611) and 2 **Washers** (610).

## 2.3. Screw Identification Template

Ref No.	Part No.	Figure	Remark
18	XYN3+L6	 	Screw
19	XTB3+8J	 	Screw
20	XTB3+F8	 	Screw
23	XYN3+F8	 	Screw
24	XYN4+F8	 	Screw
35	XYN4+F6	 	Screw
36	XYN3+F6	 	Screw
62	XTB3+6J	 	Screw
1N	XTB4+8J	 	Screw
1Y	XTB3+10J	 	Screw
4N	XSN3+W8PC	 	Screw
5Y	XUC4	 	E-Ring
6A	XTB3+12J	 	Screw
7B	XTB26+6J	 	Screw
B1	DZPB000007	 	Silver Screw
B4	XTB3+8JK	 	Blue Screw
B9	DZJM000171	 	Snap Ring

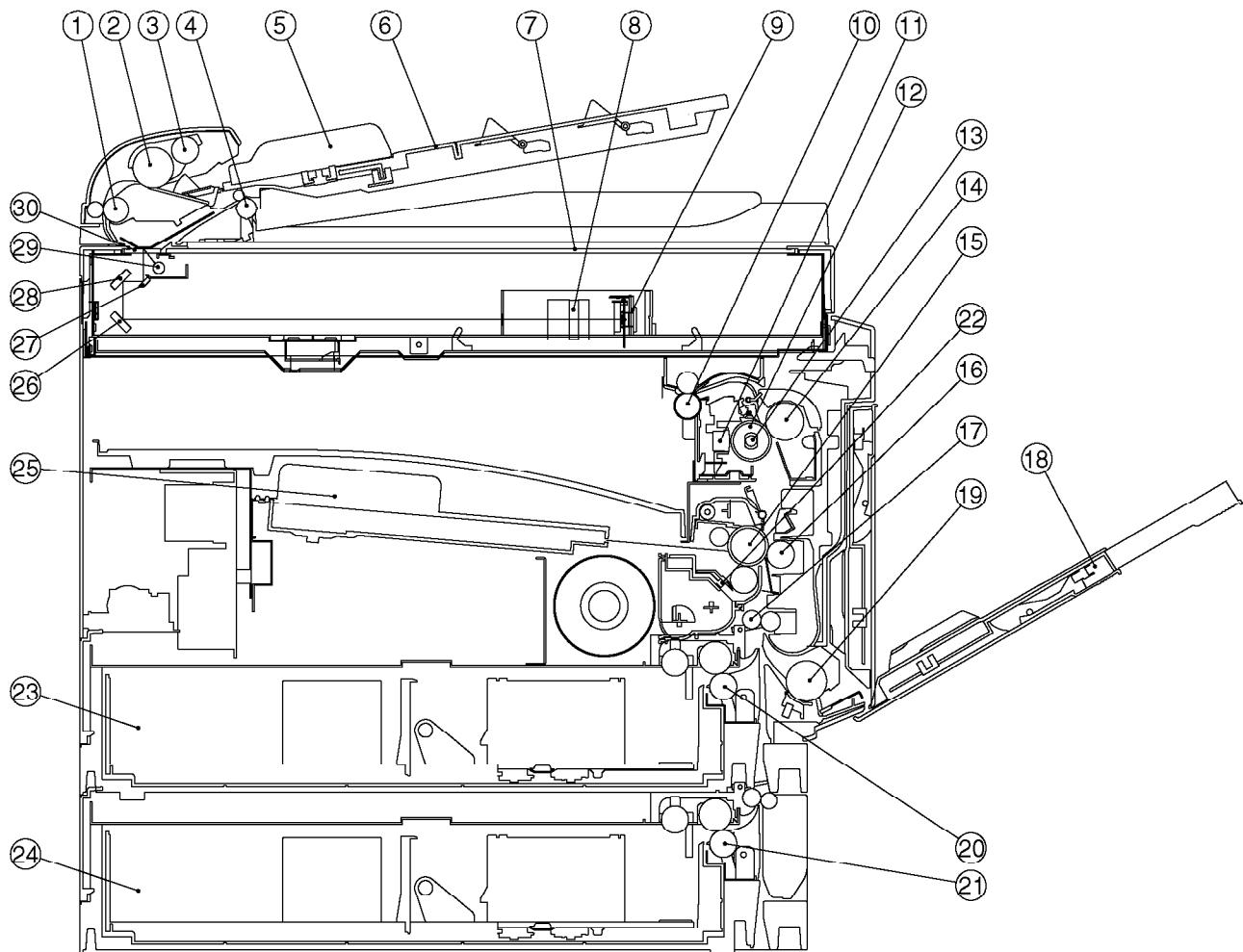
[illegible]

## 3 Maintenance, Adjustments and Check Points

### 3.1. Required Tools

No.	Tool	No.	Tool
1	Soft Cloth	7	Pliers
2	Isopropyl Alcohol	8	Cotton Swab
3	Phillips Screwdriver (#2)	9	Brush
4	Stubby Phillips Screwdriver (#2)	10	KS-660 - Conductive Grease (Available from Shin-Etsu Silicones of America, Inc. URL: <a href="http://www.shinetsusilicones.com">http://www.shinetsusilicones.com</a> )
5	Slotted Blade Screwdriver (3/32 in)	11	Molykote EM-50L Grease (Available from Dow Corning, URL: <a href="http://www.dowcorning.com">http://www.dowcorning.com</a> )
6	Tweezer		

### 3.2. Periodic Maintenance Points



### 3.2.1. Periodic Maintenance Points Part Description

No.	Part Name	No.	Part Name
1	Roller, Feed (409)	16	Roller, Bias Transfer (648)
2	Roller, Paper Feed (679)	17	Roller, Registration (1162)
3	Roller, Pre Feed (420)	18	Sheet Bypass
4	Roller, Exit (316)	19	Roller, Paper Feed (679)
5	Guides, Original F and R (332,335)	20	Roller, C25 Gear (1207)
6	Tray, Original Upper (333)	21	Roller, C25 Gear (1207)
7	Glass L Assembly (117)	22	Process Unit
8	Lens, Scanning	23	1st Paper Tray
9	CCD Assembly	24	2nd Paper Tray (Optional)
10	Roller, Exit (912)	25	LSU (710)
11	Thermostat (947)	26	Mirror 2 (552)
12	Roller, Fuser (913)	27	Mirror 1 (551)
13	Lamp, Fuser (924)	28	Mirror 2 (552)
14	Roller, Pressure (914)	29	Lamp, Scanner (501)
15	Drum, OPC (1001)	30	Glass S (116)

### 3.2.2. Periodic Maintenance Method

No.	Part Description	Important Action	Comments
1	Memory Data	Check	1. Print the RAM DATA for reference and pre-caution. 2. After completing the task(s), print and compare the RAM DATA with the previously printed one.
2	Auto Document Feeder (ADF)	Check & Clean	1. Clean the Rollers and Separation Rubber with Isopropyl Alcohol when required.
3	Scanner Unit	Check & Clean	1. Clean the Scanning Glass or White Seal Guide with Isopropyl Alcohol when required.
4	Transmitter Unit	Check & Clean	1. Remove any foreign obstacles. 2. Clean the Rollers with Isopropyl Alcohol when required.
5	Mirrors	Check & Clean	1. Do not touch the surface of the Mirrors with your hands. Clean any dirt or fingerprints with a soft cloth, saturated with Isopropyl Alcohol.
6	Inspection Items	Check	1. Check the Harnesses. 2. Check the Connectors. 3. Check the Screws. If required, replace consumable parts.
7	Gears, Rollers Shafts	Check & Grease	1. Check and grease the required Gears and Shafts.
8	Timing Belts	Check & Clean	1. Check for belt looseness or abrasion. 2. Adjust the Idle Pulley.

### 3.3. Periodic Maintenance Check List

For a detailed Periodic Maintenance Check List.

Mechanical Parts	Ref. No.	Cleaning		Replacement/Adjustment		Ref. Counter
		Cycle (Sheet)	Method	Cycle (Sheet)	Procedure	
ADF Unit						
Exit Roller	316	60K	Alcohol	-	Refer to Sect. 2.2.2.	F7-05 ADF/i-ADF PM Count
White Sheet	318	60K	Alcohol	-		
Feed Roller	409	60K	Alcohol	-		
Pre Feed Roller	420	60K	Alcohol	120K		
Separation Rubber	428	-	-	60K		
Paper Feed Roller	679	60K	Alcohol	120K		
Scanning Pad	338	60K	Dry soft cloth	-		F7-04 Scanner PM Count
Scanner Unit						
Glass S	116	60K	-	-	Refer to Sect. 2.2.5.	F7-04 Scanner PM Count
Glass L Assembly	117	60K	-	-		
Mirror 1	551	60K	-	-		
Mirror 2	552	60K	-	-		
Paper Feed Module						
C25 Gear Roller	1207	60K	Alcohol	120K	Refer to Sect. 2.2.14.	F7-12 1st Paper Tray Count
Clutch Assembly	1246	-	-	120K		
Paper Feed Roller	1213	60K	Alcohol	120K		
Registration Roller	1162	60K	Alcohol	-	Refer to Sect. 2.2.12.	F7-02 Total Count
C25 Gear Roller	1207	60K	Alcohol	120K	Refer to Sect. 2.2.14.	F7-13 2nd Paper Tray Count F7-14 3rd Paper Tray Count F7-15 4th Paper Tray Count
Clutch Assembly	1246	-	-	120K		
Paper Feed Roller	1213	60K	Alcohol	120K		
Intermediate Roller	1617	60K	-	-		
Cleaner Roller	640	60K	Dry soft cloth	240K	Refer to Sect. 2.2.13.	F7-02 Total Count
Separation Pad	659	20K	Turn over	40K		F7-11
Paper Feed Roller	679	60K	Alcohol	120K		Sheet Bypass Count
Bias Transfer Unit						
Bias Transfer Roller (BTR)	648	60K	Dry soft cloth	120K	Refer to Sect. 2.2.13.	F7-02 Total Count
Process Unit						
LSU	710	60K	Alcohol	-	Refer to Sect. 2.2.16.	F7-07 Process Unit Count
Mag Roller	1048	-	-	120K		
Gap Roller	1049	-	-	120K		
Dr Blade Assembly	1040	-	-	120K		
Development Felt	1041	-	-	120K		
Mag Roller Joint	1047	-	-	120K		
Bias Charge Roller	1036	45K	Dry soft cloth	120K		
Cleaning Blade Assembly	1035	-	-	120K		



Mechanical Parts	Ref. No.	Cleaning		Replacement/Adjustment		Ref. Counter
		Cycle (Sheet)	Method	Cycle (Sheet)	Procedure	
Front Cleaning Felt	1031	-	-	120K	Refer to Sect. 2.2.16.	F7-07 Process Unit Count
Rear Cleaning Felt	1032	-	-	120K		
Cleaning Sponge	1030	-	-	120K		
Scoop Sheet	1033	-	-	120K		
OPC Drum	1001	-	-	45K		
<b>Fuser Unit</b>						
Fuser Roller	913	60K	Alcohol	120K	Refer to Sect. 2.2.11.	F7-02 Total Count
Pressure Roller	914	60K	Alcohol	240K		
Separator	923	60K	Alcohol	120K		
Fuser Lamp (for U.S.A. and Canada)	924	-	-	240K		
Fuser Lamp (for Other Destinations)	924	-	-	240K		
P6L5.5 Bushing	932	-	-	240K		
P30L6.8 Bushing	937	-	-	120K		
Thermistor Assembly	944	60K	Dry soft cloth	120K		
Thermostat	947	60K	Dry soft cloth	-		
Separation HR Sheet	970	60K	Alcohol	120K		

**Note**

The Maintenance Cycle is based on the Counter Information for each individual module.

To verify the counter information, print the Total Counter List using the Service Mode: F9 - 03 (Print Device Info.) - 02 (Counter Information)

### 3.4. Updating the Firmware

This machine is equipped with an F-ROM (Flash ROM). F-ROM offers the flexibility of quick and easy firmware updates, creation of a master firmware card, backup and restore of firmware and machine parameters.

The following is the basic procedure to update the firmware of the machine. The details are described in the Firmware Update Tool Operating Instructions.

#### 3.4.1. Creating a Master Firmware Card

##### A. Utilizing the Firmware Update Kit

1. Install the Firmware Update Kit.
2. Install a Flash Memory Card (4 MB) into the machine.
3. Follow the instructions included in the Firmware Update Kit User's Guide.

##### B. Copying the Firmware from an Existing Machine using a 4MB Flash Memory Card

1. Turn the Power Switch to the OFF (O) position.
2. Install a Flash Memory Card (4 MB) into the machine.
3. Turn the Power Switch to the ON (I) position.
4. Press "FUNCTION", "ORIGINAL SIZE" keys and then Key "3" on the keypad sequentially.
5. Perform the Copy Service Mode F9-08-00 (FIRMWARE BACKUP HOST PROGRAM <4MB>).
6. The firmware is copied into the Flash Memory Card.
7. After the backup is completed, press "STOP" first and then press "FUNCTION" + "CLEAR" keys simultaneously to return to standby.
8. Turn the Power Switch to the OFF (O) position.
9. Remove the Master Firmware Card that you just created from the machine.
10. Turn the Power Switch to the ON (I) position.
11. Use this Master Firmware Card to update the firmware on other machines.

##### C. Copying the Firmware from an Existing Machine using two 2MB Flash Memory Cards

1. Turn the Power Switch to the OFF (O) position.
2. Install a Flash Memory Card (2 MB) into the machine.
3. Turn the Power Switch to the ON (I) position.
4. Press "FUNCTION", "ORIGINAL SIZE" keys and then Key "3" on the keypad sequentially.
5. Perform the Copy Service Mode F9-08-01 (FIRMWARE BACKUP HOST PART A <2MB>).
6. The firmware is copied into the Flash Memory Card.
7. After the backup is completed, press "STOP" first and then press "FUNCTION" + "CLEAR" keys simultaneously to return to standby.
8. Turn the Power Switch to the OFF (O) position.
9. Remove the Master Firmware Card that you just created from the machine and install a second Flash Memory Card (2 MB) into the machine.
10. Turn the Power Switch to the ON (I) position.
11. Press "FUNCTION", "ORIGINAL SIZE" keys and then Key "3" on the keypad sequentially.
12. Perform the Copy Service Mode F9-08-02 (FIRMWARE BACKUP HOST PART B <2MB>).
13. The firmware is copied into the Flash Memory Card.
14. After the backup is completed, press "STOP" first and then press "FUNCTION" + "CLEAR" keys simultaneously to return to standby.
15. Turn the Power Switch to the OFF (O) position.
16. Remove the Master Firmware Card that you just created from the machine.
17. Turn the Power Switch to the ON (I) position.
18. Use these 2 Master Firmware Cards to update the firmware on other machines.

### **3.4.2. Updating the Host Firmware using the Master Firmware Card**

#### **A. When a 4 MB Flash Memory Card was used**

1. Before starting, print the F5 & F6 Parameters (Copier) Lists.
2. Turn the Power Switch to the OFF (O) position.
3. Install the appropriate Master Firmware Card into the machine.
4. Turn the Power Switch to the ON (I) position.
5. Press "FUNCTION", "ORIGINAL SIZE" keys and then Key "3" on the keypad sequentially.
6. Perform the Copy Service Mode F9-07-00 (FIRMWARE UPDATE HOST PROGRAM <4MB>).
7. The firmware is copied into the machine.
8. After the update is completed, the machine reboots itself and returns to standby.
9. Perform the Copy Service Mode F9-06-00 (PARAMETER INITIALIZE).
10. Turn the Power Switch to the OFF (O) position.
11. Remove the Master Firmware Card from the machine.
12. Turn the Power Switch to the ON (I) position.
13. Reprogram the F5 & F6 Parameters (Copier) according to the lists printed in Step 1 above if the settings are other than factory default.

#### **B. When two 2 MB Flash Memory Cards were used**

1. Before starting, print the F5 & F6 Parameters (Copier) Lists.
2. Turn the Power Switch to the OFF (O) position.
3. Install the Master Firmware Card (Part A) into the machine.
4. Turn the Power Switch to the ON (I) position.
5. Press "FUNCTION", "ORIGINAL SIZE" keys and then Key "3" on the keypad sequentially.
6. Perform the Copy Service Mode F9-07-01 (FIRMWARE UPDATE HOST PART A <2MB>).
7. The firmware is copied into the machine.
8. After the update is completed, the machine reboots itself and returns to standby.
9. Turn the Power Switch to the OFF (O) position.
10. Remove the Master Firmware Card (Part A) and install the Master Firmware Card (Part B) into the machine.
11. Turn the Power Switch to the ON (I) position.
12. Press "FUNCTION", "ORIGINAL SIZE" keys and then Key "3" on the keypad sequentially.
13. Perform the Copy Service Mode F9-07-02 (FIRMWARE UPDATE HOST PART B <2MB>).
14. The firmware is copied into the machine.
15. After the update is completed, press "STOP" first and then press "FUNCTION" + "CLEAR" keys simultaneously to return to standby.
16. Turn the Power Switch to the OFF (O) position.
17. Remove the Master Firmware Card from the machine.
18. Turn the Power Switch to the ON (I) position.
19. Perform the Copy Service Mode F9-06-00 (PARAMETER INITIALIZE).
20. Reprogram the F5 & F6 Parameters (Copier) according to the lists printed in Step 1 above if the settings are other than factory default.

### **3.4.3. Updating the Host Firmware using a PC via the Parallel Port**

1. Before starting, print the F5 & F6 Parameters (Copier) Lists.
2. Connect the machine to the PC with a Parallel Printer Cable.
3. Install the Panasonic Firmware Programming Wizard software to the PC. (Refer to the Firmware Update Tool Operating Instructions)
4. Perform the Copy Service Mode F9-07-05 (PC → HOST).  
Now the machine is ready to accept programming firmware code from the PC.
5. Start the Panasonic Firmware Program using the Wizard.
6. The firmware is copied into the machine.
7. After the update is completed, the machine reboots itself and returns to standby.
8. Perform the Copy Service Mode F9-06-00 (PARAMETER INITIALIZE).
9. Turn the Power Switch to the OFF (O) position.
10. Remove the Master Firmware Card from the machine.
11. Turn the Power Switch to the ON (I) position.
12. Reprogram the F5 & F6 Parameters (Copier) according to the lists printed in Step 1 above if the settings are other than factory default.

### **3.4.4. Updating the PDL Board Firmware using the Master Firmware Card**

1. Turn the Power Switch to the OFF (O) position.
2. Install the appropriate Master Firmware Card into the machine.
3. Turn the Power Switch to the ON (I) position.
4. Press "FUNCTION", "ORIGINAL SIZE" keys and then Key "3" on the keypad sequentially.
5. Perform the Copy Service Mode F9-07-03 (FIRMWARE UPDATE PDL BOARD <2MB>).
6. The firmware is copied into the PDL PC Board.
7. After the update is completed, the LCD displays "COMPLETE".
8. Check the Update Version with the Copy Service Mode F9-02-05 (PRINTER BOARD (PDL)).
9. Turn the Power Switch to the OFF (O) position.
10. Remove the Master Firmware Card from the machine.
11. Turn the Power Switch to the ON (I) position.

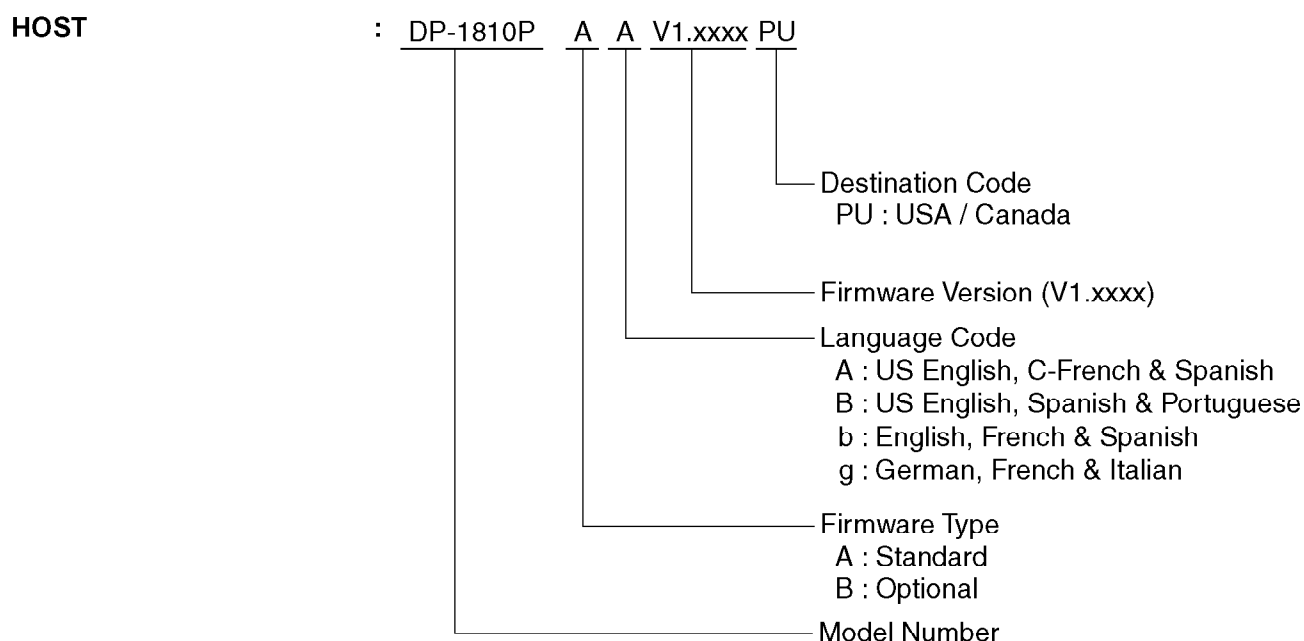
### **3.4.5. Updating the LAN Board (NIC/i-Fax) Firmware using the Master Firmware Card**

1. Turn the Power Switch to the OFF (O) position.
2. Install the appropriate Master Firmware Card into the machine.
3. Turn the Power Switch to the ON (I) position.
4. Press "FUNCTION", "ORIGINAL SIZE" keys and then Key "3" on the keypad sequentially.
5. Perform the Copy Service Mode F9-07-04 (FIRMWARE UPDATE LAN BOARD <2MB>).
6. The firmware is copied into the LAN Board.
7. After the update is completed, the LCD displays "COMPLETE".
8. Check the Update Version with the Copy Service Mode F9-02-06 (LAN BOARD).
9. Turn the Power Switch to the OFF (O) position.
10. Remove the Master Firmware Card from the machine.
11. Turn the Power Switch to the ON (I) position.

### 3.4.6. Erasing the Master Firmware Card

1. Turn the Power Switch to the OFF (O) position.
2. Install the Master Firmware Card into the machine.
3. Turn the Power Switch to the ON (I) position.
4. Press "FUNCTION", "ORIGINAL SIZE" keys and then Key "3" on the keypad sequentially.
5. Perform the Service Mode F9-09 (PC → FLASH CARD).
6. After the Flash Memory Card is erased, machine prompts "PROGRAM CARD?". Press "NO".
7. Press "STOP" first and then press "FUNCTION" + "CLEAR" keys simultaneously to return to standby.
8. Turn the Power Switch to the OFF (O) position.
9. Remove the blank Flash Memory Card from the machine.
10. Repeat from Step 2 above if you are erasing another Master Firmware Card.

### 3.4.7. Firmware Version



### 3.5. Glossary of Electrical Abbreviations

Glossary of Electrical Abbreviations	
Signal Name	Description
+12V	+12 VDC Power Supply
+24V	+24 VDC Power Supply
+24VD1	+24 VDC Power Supply
+24VF	+24 VDC Power Supply
+24VM	+24 VDC Power Supply
+24VOFF	+24 VDC Power Supply
+3.3V	+3.3 VDC Power Supply
+5V	+5 VDC Power Supply
+5VI	+5 VDC Power Supply
+5VP	+5 VDC Power Supply
+5VPRST	Panel Reset Signal
+VDO	Video Signal (LVPS + Output)
-12V	-12 VDC Power Supply
-VDO	Video Signal (LVPS - Output)
A0	Address Signal
A1	Address Signal
A10	Address Signal
A11	Address Signal
A12	Address Signal
A13	Address Signal
A14	Address Signal
A15	Address Signal
A16	Address Signal
A17	Address Signal
A18	Address Signal
A19	Address Signal
A2	Address Signal
A20	Address Signal
A21	Address Signal
A22	Address Signal
A3	Address Signal
A4	Address Signal
A5	Address Signal
A6	Address Signal
A7	Address Signal
A8	Address Signal
A9	Address Signal
AC(L)	AC Power Supply
AC(N)	AC Power Supply
AGND	Ground
AL[1]	Address Signal
AL[10]	Address Signal
AL[11]	Address Signal
AL[12]	Address Signal

<b>Glossary of Electrical Abbreviations</b>	
<b>Signal Name</b>	<b>Description</b>
AL[2]	Address Signal
AL[3]	Address Signal
AL[4]	Address Signal
AL[5]	Address Signal
AL[6]	Address Signal
AL[7]	Address Signal
AL[8]	Address Signal
AL[9]	Address Signal
BATVOL	Battery Voltage
BAT/BUZCLK	Battery Voltage Buzzer Clock
BBA[0]	S-DRAM Memory Area Switching Signal
BBA[1]	S-DRAM Memory Area Switching Signal
BDCLK[0]	S-DRAM Access Clock
BDCLK[1]	S-DRAM Access Clock
BLCNT1	LED Control
BLCNT2	LED Control
BMA[0]	Address Signal
BMA[1]	Address Signal
BMA[10]	Address Signal
BMA[11]	Address Signal
BMA[12]	Address Signal
BMA[2]	Address Signal
BMA[3]	Address Signal
BMA[4]	Address Signal
BMA[5]	Address Signal
BMA[6]	Address Signal
BMA[7]	Address Signal
BMA[8]	Address Signal
BMA[9]	Address Signal
BMD[0]	Data Signal
BMD[1]	Data Signal
BMD[10]	Data Signal
BMD[11]	Data Signal
BMD[12]	Data Signal
BMD[13]	Data Signal
BMD[14]	Data Signal
BMD[15]	Data Signal
BMD[18]	Data Signal
BMD[19]	Data Signal
BMD[2]	Data Signal
BMD[20]	Data Signal
BMD[21]	Data Signal
BMD[22]	Data Signal
BMD[23]	Data Signal
BMD[24]	Data Signal

<b>Glossary of Electrical Abbreviations</b>	
<b>Signal Name</b>	<b>Description</b>
BMD[25]	Data Signal
BMD[26]	Data Signal
BMD[27]	Data Signal
BMD[28]	Data Signal
BMD[29]	Data Signal
BMD[3]	Data Signal
BMD[30]	Data Signal
BMD[31]	Data Signal
BMD[37]	Data Signal
BMD[38]	Data Signal
BMD[4]	Data Signal
BMD[5]	Data Signal
BMD[6]	Data Signal
BMD[7]	Data Signal
BMD[8]	Data Signal
BMD[9]	Data Signal
BPLED	Photo Sensor DC Drive Voltage
BUSY	Peripheral Busy (Peripheral→Host)
BZCK	Buzzer Signal
CDTRXD	Not Used
CE1	+5 VDC Power Supply
CHARGE	Charge Signal (High Voltage)
CR0	Charge Control DC Output
CR1	Charge Control DC Output
CRCLK	Clock Signal
CRTTXD	Not Used
CS	Chip Select Signal
D0	Data Signal
D1	Data Signal
D11	Data Signal
D12	Data Signal
D13	Data Signal
D14	Data Signal
D15	Data Signal
D2	Data Signal
D3	Data Signal
D4	Data Signal
D5	Data Signal
D6	Data Signal
D7	Data Signal
D8	Data Signal
D9	Data Signal
D10	Data Signal
DAA1	ADF Motor Current Control Signal
DATA0	Data Signal



Glossary of Electrical Abbreviations	
Signal Name	Description
DATA1	Data Signal
DATA2	Data Signal
DATA3	Data Signal
DATA4	Data Signal
DATA5	Data Signal
DATA6	Data Signal
DATA7	Data Signal
DEVELOPMENT	Development Signal (High Voltage)
DR0	Development Control AC+DC Output
DRCLK	LSU Clock
FCK1	Shift Register Clock
FCK2	Shift Register Clock
FCP	Clamp Clock
FER	Transfer Signal (High Voltage)
FG	Ground
FGND	Ground
FLNG	Inverter Control Signal
FR	Reset Gate Clock
FSH	Transfer Gate Clock
GND	Ground
H/L	Not Used
HVAC1	INV PC Board/Lamp Signal
HVAC2	INV PC Board/Lamp Signal
IOD[0]	Data Signal
IOD[1]	Data Signal
IOD[10]	Data Signal
IOD[11]	Data Signal
IOD[12]	Data Signal
IOD[13]	Data Signal
IOD[14]	Data Signal
IOD[15]	Data Signal
IOD[2]	Data Signal
IOD[3]	Data Signal
IOD[4]	Data Signal
IOD[5]	Data Signal
IOD[6]	Data Signal
IOD[7]	Data Signal
IOD[8]	Data Signal
IOD[9]	Data Signal
KIN[0]	Key Scan Signal
KIN[1]	Key Scan Signal
KIN[2]	Key Scan Signal
KIN[3]	Key Scan Signal
KIN[4]	Key Scan Signal
KIN[5]	Key Scan Signal
KIN[6]	Key Scan Signal

<b>Glossary of Electrical Abbreviations</b>	
<b>Signal Name</b>	<b>Description</b>
KIN[7]	Key Scan Signal
L+5V	Laser Circuit +5 VDC Power Supply
L1	Line Signal
L1 (R)	Ground
L2	Line Signal
L2 (T)	Line Transformer Input Signal
LASERPOW	Laser Power Control
LDBTHP	Toner Bottle HP Sensor Signal
LDCST2	Photo Sensor DC Drive Voltage
LDDUP2	Photo Sensor DC Drive Voltage
LDESEN	Photo Sensor DC Drive Voltage
LDJAM2	Photo Sensor DC Drive Voltage
LDMF4	Photo Sensor DC Drive Voltage
LDMFP	Photo Sensor DC Drive Voltage
LDPS	Photo Sensor DC Drive Voltage
LDRSEN	Photo Sensor DC Drive Voltage
LDSP2	Photo Sensor DC Drive Voltage
LDUPL	Photo Sensor DC Drive Voltage
LDUPL2	Photo Sensor DC Drive Voltage
LINK	LANB PCB/ LANC PCB Link Signal
MGND	Ground
MIC (+)	Handset Microphone
MIC (-)	Handset Microphone
N.C.	No Connection / Not Used
n3MON	DC Motor Ready Signal
n3MONA	DC Motor Rotation Control Signal
n3MRDY	DC Motor Ready Signal
n5VPDLRD	Read Signal
nA3SEN	Sheet Bypass Paper Size Detection Signal
nAA3S	Original Width Detection Signal
nAADL1	Original Length Detection Signal
nAADL2	Original Length Detection Signal
nAAPNT	Original Detection Signal
nAB1SN	Read Point Detection Signal
nAB2SN	Duplex Eject Detection Signal
nAB4S	Original Width Detection Signal
nACK	Peripheral Clock / Data Transfer Acknowledge (Peripheral→Host)
nACLH1	Feed 2 Roller Clutch Control Signal
nACLH2	Paper Feed Roller Clutch Control Signal
nACLH3	Inverting Roller Clutch Control Signal
nACLOCKAD1	ADF Motor Control Clock Signal
nACSW	Relay Control Signal
pADATA1A	ADF Motor Control Signal
pADATA1B	ADF Motor Control Signal
nADF1	Feed Roller Drive Signal

<b>Glossary of Electrical Abbreviations</b>	
<b>Signal Name</b>	<b>Description</b>
nADF2	2nd Paper Tray Feed Roller Drive Signal
nAEJC	Original Eject Detection Signal
nAKEEP1	Reversing 1 Guide Solenoid Control Signal
nAKEEP2	Reversing 1 Guide Solenoid Control Signal
nANG	Platen Cover Angle
nAOAC	ADF Cover Open Detection Signal
nAPACHG	Duplex 2 Guide Solenoid Control Signal
nAPICR	Release Lever Plate Solenoid Control Signal
nAREV	ADF Exit Cover Open Detection Signal
nASTAMP	Stamp Control Signal
nASTROAD1	ADF Motor Control Strobe Signal
nAUTOFD	Host Busy (Host→Peripheral)
nB4SENS	Sheet Bypass Paper Detection Signal
nBCAS	S-DRAM Column Address Strobe Command
nBCKE	S-DRAM Clock Enable
nBCS[2]	Chip Select Signal
nBCS[3]	Chip Select Signal
nBCS[4]	Not Used
nBCS[5]	Not Used
nBDOOR	Platen Cover Open Detection Signal
nBDQMH	Input/Output Mask Signal
nBDQML	Input/Output Mask Signal
nBMWT	S-DRAM Write Enable
nBPSEN	Toner Waste Container Sensor
nBRAS	S-DRAM Row Address Strobe Command
nCASET2	2nd Paper Tray Detection Signal
nCASET3	3rd Paper Tray Detection Signal
nCASET4	4th Paper Tray Detection Signal
nCSETT	Paper Tray Detection Signal (1st Feeder)
nCCLH1	Feed 2 Roller Clutch Control Signal
nCD	Flash Card ID
nCE1	+5 VDC Power Supply
nCE2	Low Enable
nCMD	Command Signal
nCMDBSY	Command Busy Signal
nCOUNT	Counter Drive Signal
nCS08	Chip Enable Signal
nCS09	Chip Enable Signal
nCS0A	Chip Enable Signal
nCS0E	Chip Enable Signal
nCST	4th Paper Tray Detection Signal
nCST2	2nd Paper Tray Detection Signal
nCSTOP2	2nd Paper Feed Module Detection Signal
nCSTOP3	3rd Paper Feed Module Detection Signal
nCSTOP4	4th Paper Feed Module Detection Signal

<b>Glossary of Electrical Abbreviations</b>	
<b>Signal Name</b>	<b>Description</b>
nCTON	Ring Detection Signal
nDADFON	ADF Option Detection Signal
nDUPKEP2	Duplex Keep Solenoid Drive Signal
nDUPSEN1	Duplex Sensor1 Signal
nESEN	Inner Under Tray Paper Exit Signal
nFAULT	Data Available / Error Condition (Peripheral→Host)
nFDPCHK2	2nd Paper Tray Paper Registration Detection Signal
nFDPCHK3	3rd Paper Tray Paper Registration Detection Signal
nFDPCHK4	4th Paper Tray Paper Registration Detection Signal
nFEED	Feed Signal
nFLON	Inverter Ground
nFNRTD	Fan Ready Signal
nHDF	Sheet Bypass Feed Roller Drive Signal
nHKOF	External Phone Off-Hook Detection Signal
nHSYNC	Horizontal Synchronous Signal
nID0	Flash Card ID
nID1	Flash Card ID
nID2	Flash Card ID
nINIT	Reverse Request / Initialize (Host→Peripheral)
nIORD	I/O Read Signal
nIOWRH	I/O Write (High) Signal
nIOWRL	I/O Write (Low) Signal
nIRQOP1	Interrupt Signal
nIRQOP2	Interrupt Signal
nIRQOP3	Interrupt Signal
nJAMDOR2	2nd Paper Tray Jam Access Cover Open Detection Signal
nJAMDOR3	3rd Paper Tray Jam Access Cover Open Detection Signal
nJAMDOR4	4th Paper Tray Jam Access Cover Open Detection Signal
nLDON	Laser Control
nLEDCT[0]	LED Control
nLEDCT[1]	LED Control
nLEDCT[2]	LED Control
nLEDCT[3]	LED Control
nLEDCT[4]	LED Control
nLIFT1	Lift DC Motor Ready Signal
nLIFTM2	2nd Paper Tray Lift Motor Drive Signal
nLPOW	Energy Saver Mode Control Signal
nLSFN	LSU Fan Drive
nMFPCCK	Sheet Bypass Paper Detection Signal
nMFSEN4	Sheet Bypass Paper Length Detection Signal
nMIRQPD	Interrupt Request Signal
nMMCK	Printer Motor Clock
nMMON	Printer Motor Rotation Control Signal
nMMRDY	Lift DC Motor Ready Signal

<b>Glossary of Electrical Abbreviations</b>	
<b>Signal Name</b>	<b>Description</b>
nMRCLH2	2nd Paper Tray Intermediate Roller Clutch Drive Signal
nOE	Read Enable
nOPB1	Option Detection Signal
nOPB2	Option Detection Signal
nOPB3	Option Detection Signal
nOPDUP	Duplex Unit Option Detection
nOPON	Option Detection Signal
nOPRT	Toner Waste Sensor PCB Detection
nORI	Home Position Detection Signal
nOUTA	Motor Control Signal
nOUTB	Motor Control Signal
nPCHK1	1st Paper Tray Paper Detection Signal
nPCHK2	2nd Paper Tray Paper Detection Signal
nPCHK3	3rd Paper Tray Paper Detection Signal
nPCHK4	3rd Medium Roller Drive Signal
nPDLOPT	Option Detection Signal
nPDLRST	Reset Signal
nPMON	Polygon Motor Rotation Signal
nPMRDY	Polygon Motor Ready Signal
nPNLRST	Panel Reset Signal
nPRDY	Printer Ready Signal
nPSAVE	Energy Saver Mode Transport Signal
nPSDES	Energy Saver Mode Disable Signal
nPWSW	Energy Saver LED
nRRCLH	Registration Roller Drive Signal
nPRINT	Printer On Signal
nRSEN	Registration Sensor Signal
nS/H	Sample Hold Signal
nSBSY	Status Busy Signal
nSCLK	Clock Signal
nSELIN	IEEE1284 Active (Host→Peripheral)
nSLPKY	Sleep Key Signal
nSSR	Heater Control Signal
nSTA	Status Signal
nSTB	Host Clock / Data Transfer Strobe (Host→Peripheral)
nTFSEN	Toner Waste Sensor
nTM	Toner Bottle Motor Sensor
nUPLIMIT	4th Paper Tray Paper Level Signal
nUPLIMIT1	Paper Level Signal (1st Feeder)
nVSYNC	Vertical Synchronous Signal
nWAIT[1]	BUS Wait Signal
nWAIT[2]	BUS Wait Signal
nWAIT[3]	BUS Wait Signal
nWAIT[5]	BUS Wait Signal
nWAKUP	Energy Saver Mode Enable





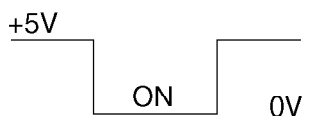
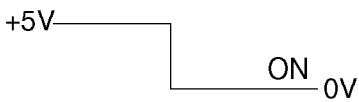
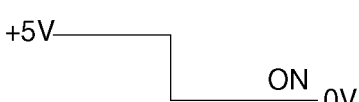
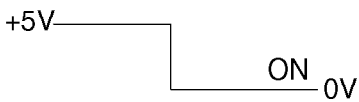
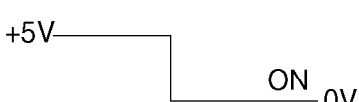
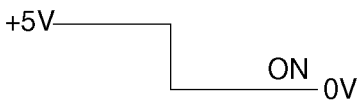
Glossary of Electrical Abbreviations	
Signal Name	Description
nWEH	High Enable
nWEL	Write Low Enable
OUTA	Motor Control Signal
OUTB	Motor Control Signal
pAB1SN	ADF Cover Open Detection Signal
pADF2A	2nd Feed Roller Drive Signal
pADF3A	3rd Feed Roller Drive Signal
pADF4A	4th Feed Roller Drive Signal
pBTHP	Photo Sensor DC Drive Voltage
pCMLD	Line Switching Relay Drive Signal
PD[0]	Data Signal
PD[1]	Data Signal
PD[10]	Data Signal
PD[11]	Data Signal
PD[12]	Data Signal
PD[13]	Data Signal
PD[14]	Data Signal
PD[15]	Data Signal
PD[2]	Data Signal
PD[3]	Data Signal
PD[4]	Data Signal
PD[5]	Data Signal
PD[6]	Data Signal
PD[7]	Data Signal
PD[8]	Data Signal
PD[9]	Data Signal
PE	Acknowledge Data Request / Paper Empty Condition (Peripheral→Host)
pLDCTL	Laser Control
pLED[0]	LED Data
pLED[1]	LED Data
pLED[2]	LED Data
pLED[4]	LED Data
pLED[5]	LED Data
pLED[6]	LED Data
pLED[7]	LED Data
pLIFT2	2nd Lift DC Motor Drive Signal
pLIFT3	3rd Feed Roller Drive Signal
pLIFT4	4th Lift DC Motor Drive Signal
PLH	+5V Pull Up
pLPRST	LP Reset Signal
PMCK	Polygon Motor Clock
pMRCLH2A	2nd Medium Roller Drive Signal
pMRCLH3A	3rd Medium Roller Drive Signal
pMRCLH4A	4th Medium Roller Drive Signal
PNLRXD	Reception Signal

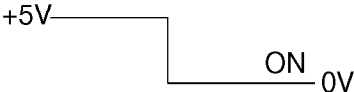
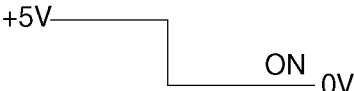
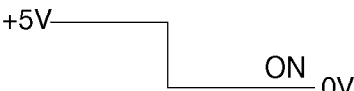
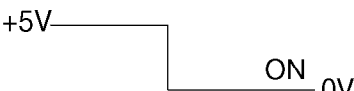







<b>Glossary of Electrical Abbreviations</b>	
<b>Signal Name</b>	<b>Description</b>
PNLTXD	Transmission Signal
pOP1RST	Reset Signal
pOP2RST	Reset Signal
pOP3RST	Reset Signal
pPDLREQ	Direct Memory Access Data Request Signal
pUPLIMIT2	2nd Lift DC Motor Ready Signal
pUPLIMIT3	3rd Lift DC Motor Ready Signal
pUPLIMIT4	4th Lift DC Motor Ready Signal
pZCIN	Heater Control Signal
RCV (+)	Handset Receiver
RCV (-)	Handset Receiver
RDM	Reception Data "-" Signal
RDP	Reception Data "+" Signal
RDY / nBSY	Not Used
RSV	Not Used
RXD	Reception Data Signal
SCN[0]	Key Scan Signal
SCN[1]	Key Scan Signal
SCN[2]	Key Scan Signal
SCN[3]	Key Scan Signal
SCN[4]	Key Scan Signal
SCN[5]	Key Scan Signal
SCN[6]	Key Scan Signal
SCN[7]	Key Scan Signal
SCN[8]	Key Scan Signal
SELECT	Select Signal (Peripheral→Host)
SMEMID[0]	Memory ID
SMEMID[1]	Memory ID
SMEMID[2]	Memory ID
SMEMID[3]	Memory ID
SWCT0	One Touch Choice
SWCT1	One Touch Choice
T1	Line Signal
T2	Line Signal
TDM	Transmission Data "-" Signal
TDP	Transmission Data "+" Signal
TFLED	Photo Sensor DC Drive Voltage
THERM1	Thermistor Output Signal
THERM2	Ground
TLCNT	Energy Saver LED
TONERSEN	Toner Sensor Signal
TR0	Transfer Control Cleaning Output
TR1	Transfer Control Transfer Output
TRCP	+2.5 VDC Power Supply
VCC	+5 VDC Power Supply

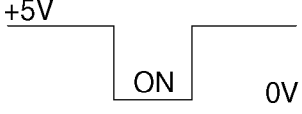
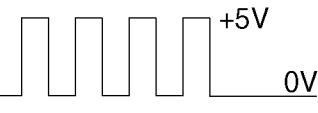
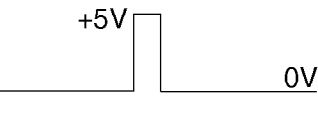
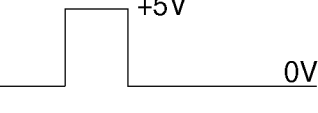
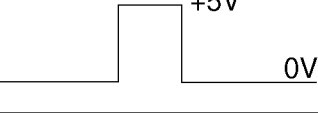


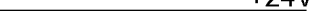

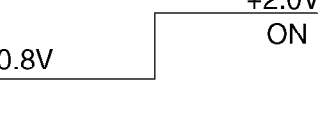

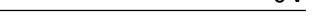
<b>Glossary of Electrical Abbreviations</b>	
<b>Signal Name</b>	<b>Description</b>
VOUT1	Graphic Data Output
VOUT2	Graphic Data Output
VPP2	Not Used


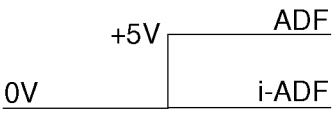
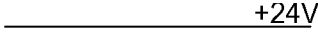
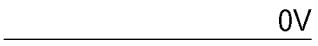
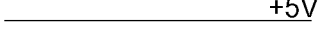



### 3.6. SC PC Board CN3

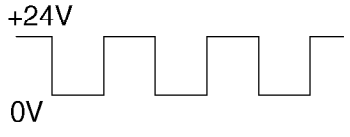
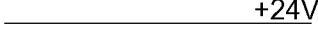
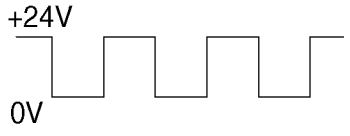
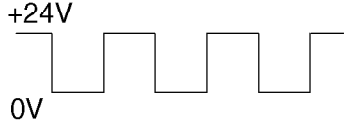
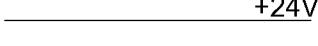
SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN3-1	+5VP	ADF PCB CN21-1		+5 VDC Power Supply
CN3-2	MGND	ADF PCB CN21-2		Ground
CN3-3	GND	ADF PCB CN21-3		Ground
CN3-4	+24V	ADF PCB CN21-4		+24 VDC Power Supply
CN3-5	nAAPNT	ADF PCB CN21-5		Original Detection Signal L: Detect
CN3-6	N.C.	ADF PCB CN21-6		Not Used
CN3-7	nAB4S	ADF PCB CN21-7		Original Width Detection Signal L: Detect
CN3-8	nAA3S	ADF PCB CN21-8		Original Width Detection Signal L: Detect
CN3-9	nAADL1	ADF PCB CN21-9		Original Length Detection Signal L: Detect
CN3-10	nAADL2	ADF PCB CN21-10		Original Length Detection Signal L: Detect
CN3-11	nAB2SN	ADF PCB CN21-11		Duplex Eject Detection Signal L: Detect

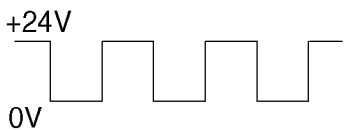
SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN3-12	nAB1SN	ADF PCB CN21-12	+5V  0V	Read Point Detection Signal L: Detect
CN3-13	nAEJC	ADF PCB CN21-13	+5V  0V	Original Eject Detection Signal L: Detect
CN3-14	nAREV	ADF PCB CN21-14	+5V  0V	ADF Exit Cover Open Detection Signal L: Detect
CN3-15	nAOAC	ADF PCB CN21-15	+5V  0V	ADF Cover Open Detection Signal L: Detect
CN3-16	nAKEEP1	ADF PCB CN21-16	+5V  0V	ADF Document Stopper Solenoid Control Signal
CN3-17	nAKEEP2	ADF PCB CN21-17	+5V  0V	ADF Document Stopper Solenoid Control Signal
CN3-18	nAPACHG	ADF PCB CN21-18	+5V  0V	Duplex 2 Guide Solenoid Control Signal
CN3-19	nAPICR	ADF PCB CN21-19	+5V  0V	Release Lever Plate Solenoid Control Signal
CN3-20	nASTAMP	ADF PCB CN21-20	+5V  0V	ADF Stamp Solenoid Control Signal
CN3-21	nACLH1	ADF PCB CN21-21	+5V  0V	Feed 2 Roller Clutch Control Signal
CN3-22	nACLH2	ADF PCB CN21-22	+5V  0V	Paper Feed Roller Clutch Control Signal

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN3-23	nACLH3	ADF PCB CN21-23		Inverting Roller Clutch Control Signal
CN3-24	nACLOCKAD1	ADF PCB CN21-24		ADF Motor Control Clock Signal
CN3-25	nASTROAD1	ADF PCB CN21-25		ADF Motor Control Strobe Signal
CN3-26	pADATA1A	ADF PCB CN21-26		ADF Motor Control Signal
CN3-27	pADATA1B	ADF PCB CN21-27		ADF Motor Control Signal
CN3-28	+24V	ADF PCB CN21-28		+24 VDC Power Supply
CN3-29	GND	ADF PCB CN21-29		Ground
CN3-30	+24V	ADF PCB CN21-30		+24 VDC Power Supply
CN3-31	GND	ADF PCB CN21-31		Ground
CN3-32	DAA1	ADF PCB CN21-32		ADF Motor Current Control Signal
CN3-33	MGND	ADF PCB CN21-33		Ground
CN3-34	MGND	ADF PCB CN21-34		Ground

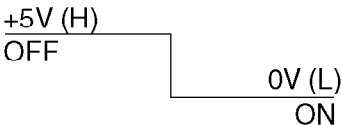
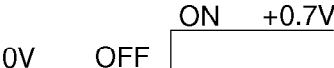

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN3-35	GND	ADF PCB CN21-35		Ground
CN3-36	nDADFON	ADF PCB CN21-36		ADF Option Detection Signal H: ADF Option Installed L: i-ADF Option Installed
CN3-37	+24V	ADF PCB CN21-37		+24 VDC Power Supply
CN3-38	MGND	ADF PCB CN21-38		Ground
CN3-39	+5V	ADF PCB CN21-39		+5 VDC Power Supply
CN3-40	+5V	ADF PCB CN21-40		+5 VDC Power Supply

## CN8






SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN8-1	OUTA	Stepping Motor		Motor Control Signal
CN8-2	+24V	Stepping Motor		+24 VDC Power Supply
CN8-3	nOUTA	Stepping Motor		Motor Control Signal
CN8-4	OUTB	Stepping Motor		Motor Control Signal
CN8-5	+24V	Stepping Motor		+24 VDC Power Supply

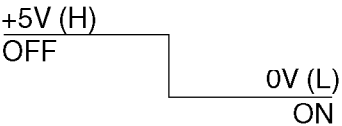
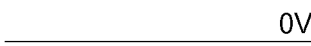
SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN8-6	nOUTB	Stepping Motor		Motor Control Signal

#### CN9

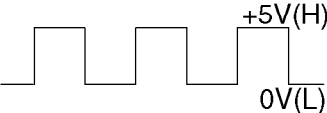
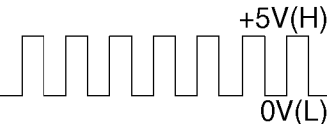
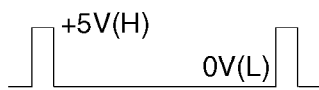
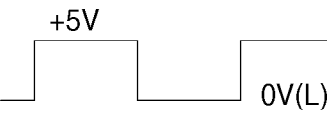
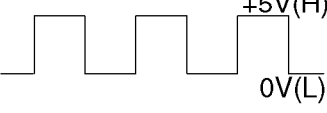
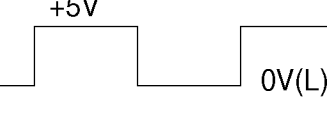
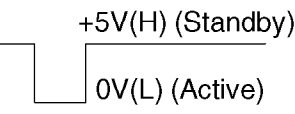

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN9-1	nFLON	INV PCB CN1-1		Inverter Ground
CN9-2	FLNG	INV PCB CN1-2		Inverter Control Signal
CN9-3	+24V	INV PCB CN1-3		+24 VDC Power Supply

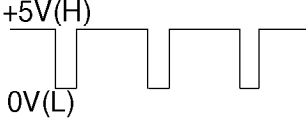



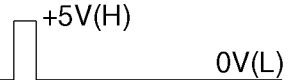

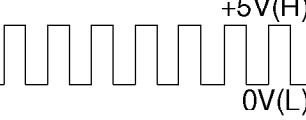
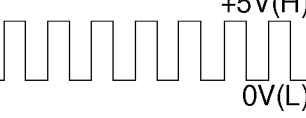
#### CN10

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN10-1	+5VP	SNS PCB CN41-1		+5 VDC Power Supply
CN10-2	nANG	SNS PCB CN41-2		Platen Cover Angle
CN10-3	GND	SNS PCB CN41-3		Ground
CN10-4	nBDOOR	SNS PCB CN41-4		Platen Cover Open Detection Signal L: Open
CN10-5	N.C.			Not Used
CN10-6	+5V	Home Position Sensor		+5 VDC Power Supply


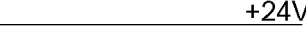

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN10-7	nORI	Home Position Sensor		Home Position Detection Signal
CN10-8	GND	Home Position Sensor		Ground




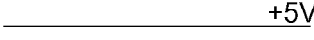


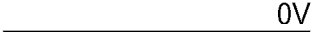
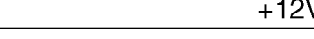


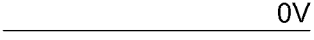
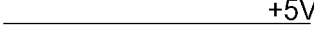
#### CN100

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN100-1	nSTA	LPC3 PCB CN704-1		Status Signal
CN100-2	nSCLK	LPC3 PCB CN704-2		Clock Signal
CN100-3	nVSYNC	LPC3 PCB CN704-3		Vertical Synchronous Signal
CN100-4	nSBSY	LPC3 PCB CN704-4		Status Busy Signal H: Status Not Busy L: Status Busy
CN100-5	nCMD	LPC3 PCB CN704-5		Command Signal
CN100-6	nCMDBSY	LPC3 PCB CN704-6		Command Busy Signal H: Command Not Busy L: Command Busy
CN100-7	nPRINT	LPC3 PCB CN704-7		Printer On Signal
CN100-8	nPRDY	LPC3 PCB CN704-8		Printer Ready Signal H: Not Ready L: Ready

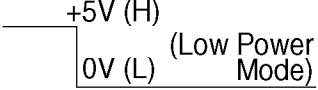
SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN100-9	nHSYNC	LPC3 PCB CN704-9		Horizontal Synchronous Signal
CN100-10	GND	LPC3 PCB CN704-10		Ground
CN100-11	nFEED	LPC3 PCB CN704-11		Feed Signal
CN100-12	GND	LPC3 PCB CN704-12		Ground
CN100-13	pLPRST	LPC3 PCB CN704-13		LP Reset Signal H: Reset L: Not Reset
CN100-14	nFEDBSY	LPC3 PCB CN704-14		Feed Busy Signal H: Feed Not Busy L: Feed Busy
CN100-15	DRCLK	LPC3 PCB CN704-15		LSU Clock
CN100-16	CRCLK	LPC3 PCB CN704-16		Clock Signal

#### CN101

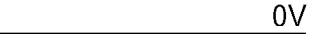
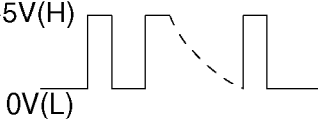

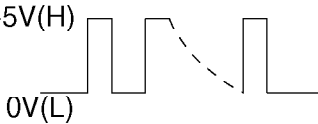
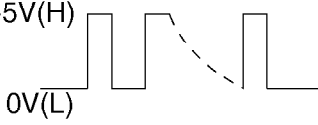
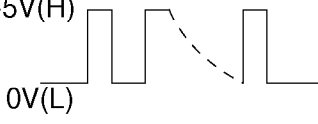
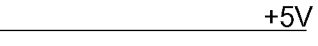
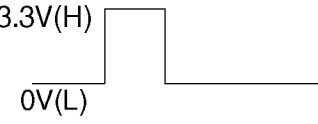
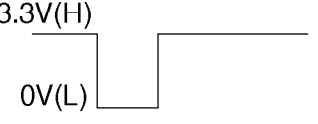
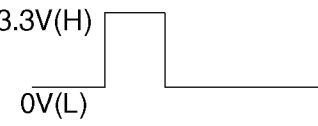
SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN101-1	+24V	LVPS PCB CN61-1		+24 VDC Power Supply
CN101-2	+24V	LVPS PCB CN61-2		+24 VDC Power Supply
CN101-3	+24V	LVPS PCB CN61-3		+24 VDC Power Supply





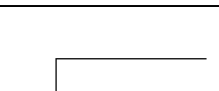




SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN101-4	MGND	LVPS PCB CN61-4	 0V	Ground
CN101-5	MGND	LVPS PCB CN61-5	 0V	Ground
CN101-6	MGND	LVPS PCB CN61-6	 0V	Ground
CN101-7	+5V	LVPS PCB CN61-7	 +5V	+5 VDC Power Supply
CN101-8	+5V	LVPS PCB CN61-8	 +5V	+5 VDC Power Supply
CN101-9	GND	LVPS PCB CN61-9	 0V	Ground
CN101-10	GND	LVPS PCB CN61-10	 0V	Ground
CN101-11	+12V	LVPS PCB CN61-11	 +12V	+12 VDC Power Supply
CN101-12	AGND	LVPS PCB CN61-12	 0V	Ground
CN101-13	-12V	LVPS PCB CN61-13	 -12V	-12 VDC Power Supply
CN101-14	AGND	LVPS PCB CN61-14	 0V	Ground
CN101-15	+5VP	LVPS PCB CN61-15	 +5V	+5 VDC Power Supply

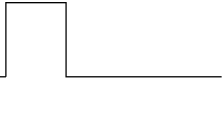

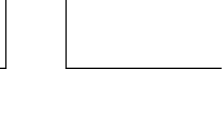
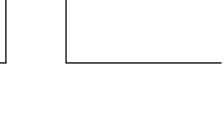
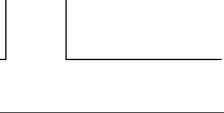
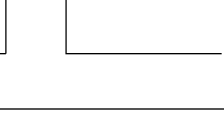
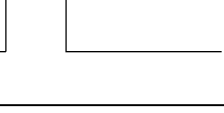
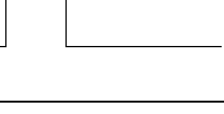
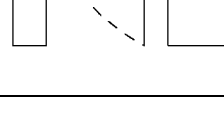
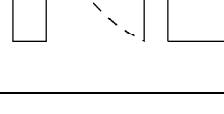
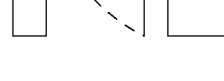


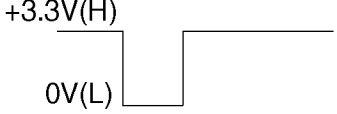
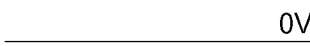

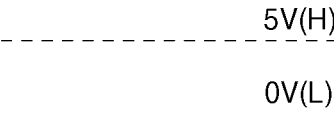
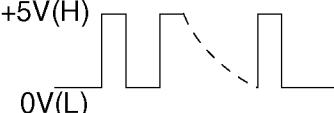
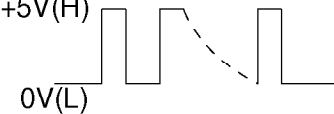
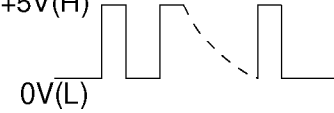
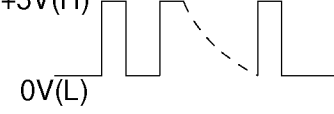
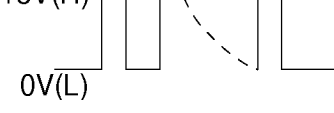
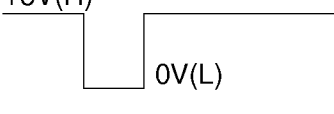
SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN101-16	nLPOW1	LVPS PCB CN61-16		Energy Saver Mode Control Signal

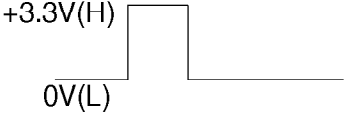
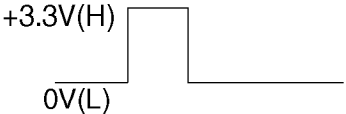
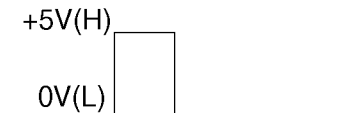
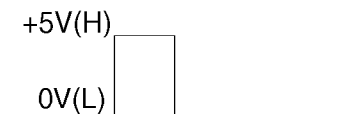


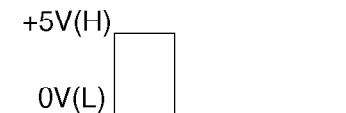
#### CN104

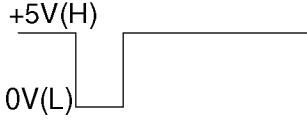
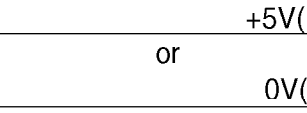
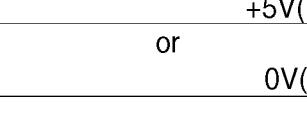
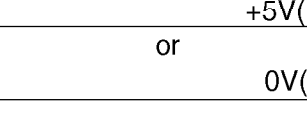

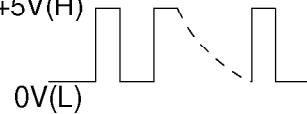
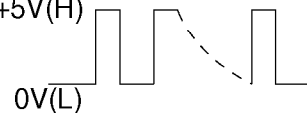
SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN104-1	GND	Flash Memory Card		Ground
CN104-2	D3	Flash Memory Card		Data Signal
CN104-3	D4	Flash Memory Card		Data Signal
CN104-4	D5	Flash Memory Card		Data Signal
CN104-5	D6	Flash Memory Card		Data Signal
CN104-6	D7	Flash Memory Card		Data Signal
CN104-7	nCE1	Flash Memory Card		+5 VDC Power Supply
CN104-8	A10	Flash Memory Card		Address Signal
CN104-9	nOE	Flash Memory Card		Read Enable H: Read Disable L: Read Enable
CN104-10	A11	Flash Memory Card		Address Signal

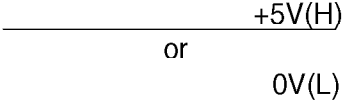
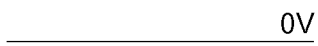
SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN104-11	A9	Flash Memory Card	+3.3V(H) 0V(L) 	Address Signal
CN104-12	A8	Flash Memory Card	+3.3V(H) 0V(L) 	Address Signal
CN104-13	A13	Flash Memory Card	+3.3V(H) 0V(L) 	Address Signal
CN104-14	A14	Flash Memory Card	+3.3V(H) 0V(L) 	Address Signal
CN104-15	nWEL	Flash Memory Card	+3.3V(H) 0V(L) 	Write Low Enable H: Write Disable L: Write Enable
CN104-16	RDY / nBSY	Flash Memory Card		Not Used
CN104-17	VCC	Flash Memory Card	+5V 	+5 VDC Power Supply
CN104-18	N.C.	Flash Memory Card		Not Used
CN104-19	A16	Flash Memory Card	+3.3V(H) 0V(L) 	Address Signal
CN104-20	A15	Flash Memory Card	+3.3V(H) 0V(L) 	Address Signal
CN104-21	A12	Flash Memory Card	+3.3V(H) 0V(L) 	Address Signal

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN104-22	A7	Flash Memory Card	+3.3V(H) 0V(L) 	Address Signal
CN104-23	A6	Flash Memory Card	+3.3V(H) 0V(L) 	Address Signal
CN104-24	A5	Flash Memory Card	+3.3V(H) 0V(L) 	Address Signal
CN104-25	A4	Flash Memory Card	+3.3V(H) 0V(L) 	Address Signal
CN104-26	A3	Flash Memory Card	+3.3V(H) 0V(L) 	Address Signal
CN104-27	A2	Flash Memory Card	+3.3V(H) 0V(L) 	Address Signal
CN104-28	A1	Flash Memory Card	+3.3V(H) 0V(L) 	Address Signal
CN104-29	A0	Flash Memory Card	+3.3V(H) 0V(L) 	Address Signal
CN104-30	D0	Flash Memory Card	+5V(H) 0V(L) 	Data Signal
CN104-31	D1	Flash Memory Card	+5V(H) 0V(L) 	Data Signal
CN104-32	D2	Flash Memory Card	+5V(H) 0V(L) 	Data Signal



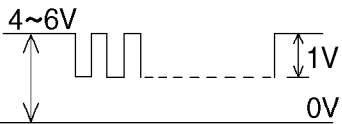
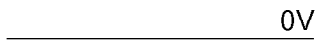
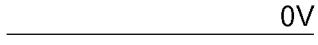
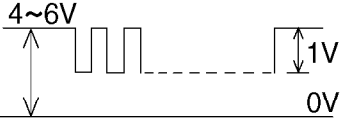
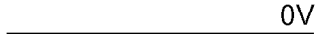
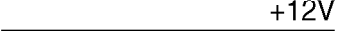
SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN104-33	nWEH	Flash Memory Card	 <p>+3.3V(H) 0V(L)</p>	High Enable H: Disable L: Enable
CN104-34	GND	Flash Memory Card	 <p>0V</p>	Ground
CN104-35	GND	Flash Memory Card	 <p>0V</p>	Ground
CN104-36	nCD	Flash Memory Card	 <p>5V(H) 0V(L)</p>	Flash Card ID H: Card Not Installed L: Card Installed
CN104-37	D11	Flash Memory Card	 <p>+5V(H) 0V(L)</p>	Data Signal
CN104-38	D12	Flash Memory Card	 <p>+5V(H) 0V(L)</p>	Data Signal
CN104-39	D13	Flash Memory Card	 <p>+5V(H) 0V(L)</p>	Data Signal
CN104-40	D14	Flash Memory Card	 <p>+5V(H) 0V(L)</p>	Data Signal
CN104-41	D15	Flash Memory Card	 <p>+5V(H) 0V(L)</p>	Data Signal
CN104-42	nCE2	Flash Memory Card	 <p>+5V(H) 0V(L)</p>	Low Enable
CN104-43	N.C.	Flash Memory Card		Not Used

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN104-44	RSV	Flash Memory Card		Not Used
CN104-45	RSV	Flash Memory Card		Not Used
CN104-46	A17	Flash Memory Card		Address Signal
CN104-47	A18	Flash Memory Card		Address Signal
CN104-48	A19	Flash Memory Card		Address Signal
CN104-49	A20	Flash Memory Card		Address Signal
CN104-50	A21	Flash Memory Card		Memory Area Switching Signal
CN104-51	VCC	Flash Memory Card		+5 VDC Power Supply
CN104-52	VPP2	Flash Memory Card		Not Used
CN104-53	A22	Flash Memory Card		Address Signal
CN104-54	N.C.	Flash Memory Card		Not Used
CN104-55	N.C.	Flash Memory Card		Not Used








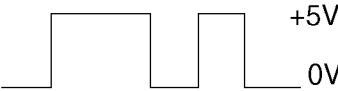

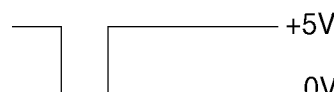
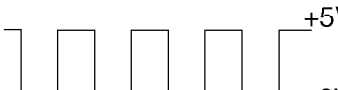
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CN104-56	N.C.	Flash Memory Card		Not Used
CN104-57	RSV	Flash Memory Card		Not Used
CN104-58	nRST	Flash Memory Card		Reset Signal H: Not Reset L: Reset
CN104-59	nMB8	Flash Memory Card		Memory Version Detection Signal
CN104-60	RSV	Flash Memory Card		Not Used
CN104-61	N.C.	Flash Memory Card		Not Used
CN104-62	nID2	Flash Memory Card		Flash Card ID
CN104-63	nID1	Flash Memory Card		Flash Card ID
CN104-64	D8	Flash Memory Card		Data Signal
CN104-65	D9	Flash Memory Card		Data Signal
CN104-66	D10	Flash Memory Card		Data Signal

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN104-67	nID0	Flash Memory Card		Flash Card ID
CN104-68	GND	Flash Memory Card		Ground

#### CN106

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN106-1	AGND	CCD PCB CN51-9		Ground
CN106-2	AGND	CCD PCB CN51-10		Ground
CN106-3	VOUT2	CCD PCB CN51-12		Graphic Data Output
CN106-4	AGND	CCD PCB CN51-11		Ground
CN106-5	AGND	CCD PCB CN51-13		Ground
CN106-6	VOUT1	CCD PCB CN51-14		Graphic Data Output
CN106-7	AGND	CCD PCB CN51-16		Ground
CN106-8	+12V	CCD PCB CN51-15		+12 VDC Power Supply

## CN108

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN108-1	+24V	PNL6-1 PCB CN201-1	 +24V	+24 VDC Power Supply
CN108-2	+5VP	PNL6-1 PCB CN201-2	 +5V	+5 VDC Pilot Power Supply, that provides power to the active components during the Sleep Mode.
CN108-3	+5V	PNL6-1 PCB CN201-3	 +5V	+5 VDC Power Supply
CN108-4	GND	PNL6-1 PCB CN201-4	 0V	Ground
CN108-5	GND	PNL6-1 PCB CN201-5	 0V	Ground
CN108-6	GND	PNL6-1 PCB CN201-6	 0V	Ground
CN108-7	PNLRXD	PNL6-1 PCB CN201-7	 +5V 0V	Reception Signal
CN108-8	PNLTXD	PNL6-1 PCB CN201-8	 +5V 0V	Transmission Signal
CN108-9	nPNLRST	PNL6-1 PCB CN201-9	 +5V 0V	Panel Reset Signal H: Reset L: Not Reset
CN108-10	nWAKUP	PNL6-1 PCB CN201-10	 +5V 0V	Energy Saver Mode Enable H: Disable L: Enable
CN108-11	BZCK	PNL6-1 PCB CN201-11	 +5V 0V	Buzzer Signal



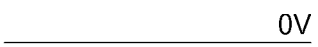

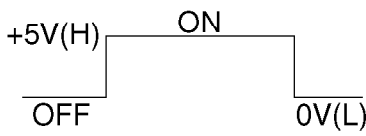
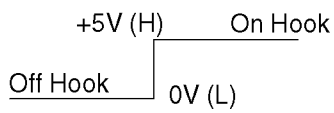

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN108-12	nPSAVE	PNL6-1 PCB CN201-12		Energy Saver Mode Transport Signal
CN108-13	BATVOL	PNL6-1 PCB CN201-13	0V ~ +3V	Battery Voltage
CN108-14	nSLPKY	PNL6-1 PCB CN201-14		Sleep Key Signal
CN108-15	+5VPRST	PNL6-1 PCB CN201-15		Panel Reset Signal L: Reset

#### CN110


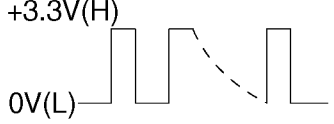
SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN110-1	+3.3V	LSU CN810-1		+3.3 VDC Power Supply
CN110-2	GND	LSU CN810-2		Ground
CN110-3	+VDO	LSU CN810-3		Video Signal (LVPS + Output)
CN110-4	-VDO	LSU CN810-4		Video Signal (LVPS - Output)

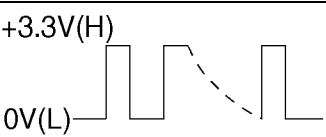
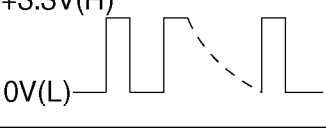
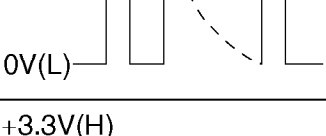
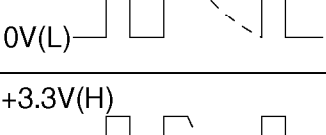
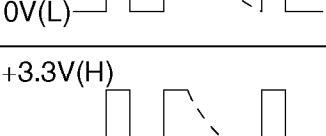
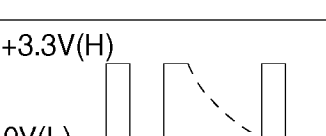

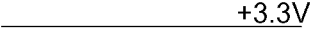
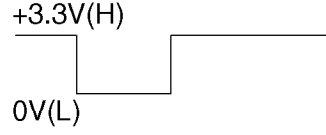
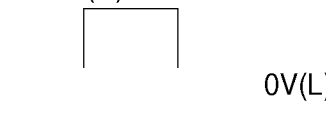
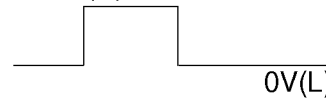
#### CN111 (Except DP-1510P/1810P)

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN111-1	N.C.			Not Used
CN111-2	+5VP	MJR PCB CN25-1		+5 VDC Power Supply

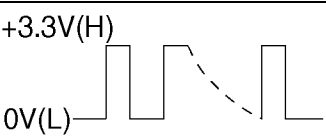
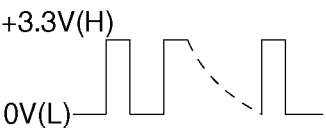
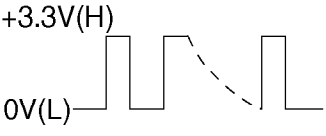
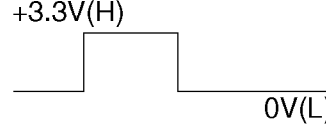
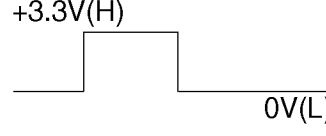
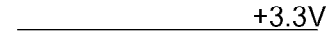
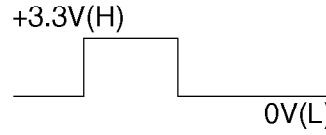
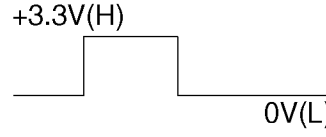
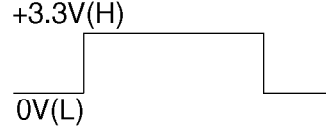
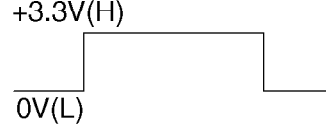
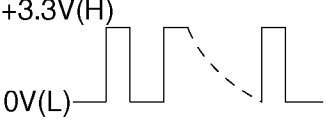
SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN111-3	GND	MJR PCB CN25-2		Ground
CN111-4	+24V	MJR PCB CN25-3		+24 VDC Power Supply
CN111-5	pCMLD	MJR PCB CN25-4		Line Switching Relay Drive Signal
CN111-6 -8	N.C.			Not Used
CN111-9	nHKOF	MJR PCB CN25-5		External Phone Off-Hook Detection Signal
CN111-10	nCTON	MJR PCB CN25-6	H: Standby Mode L: Ringing	Ring Detection Signal
CN111-11	N.C.			Not Used
CN111-12	AGND	MJR PCB CN25-7		Ground
CN111-13- 15	N.C.			Not Used

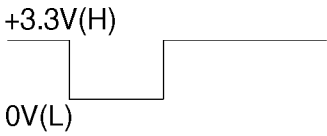
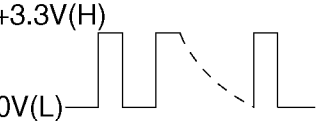
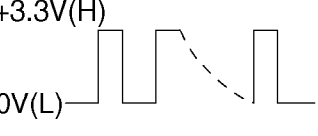
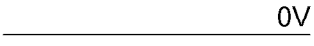
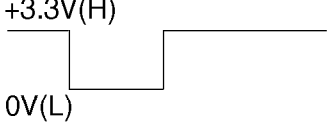
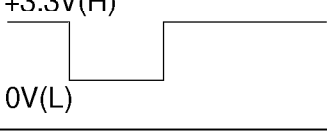
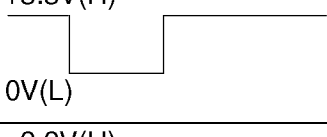
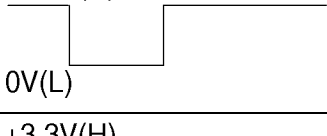
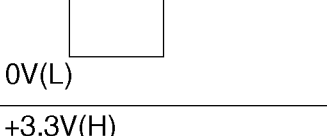
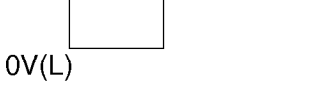
### CN113

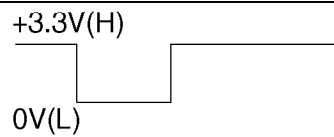
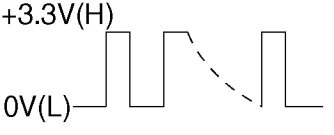
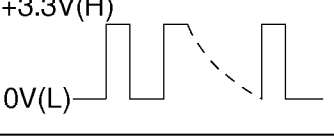
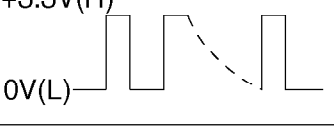
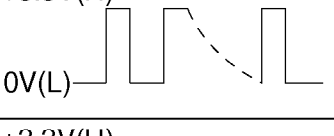
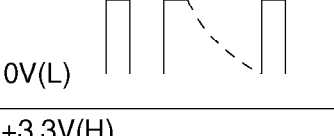
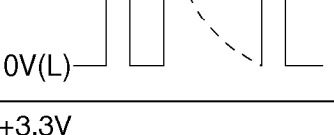
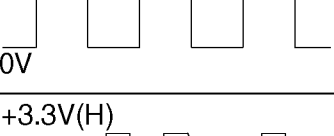
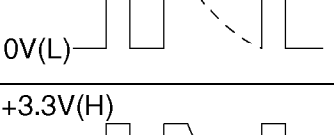
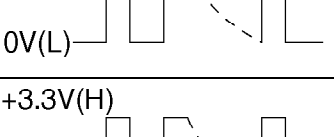
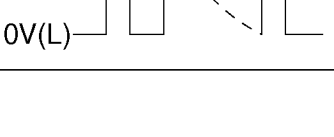
SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN113-1	GND	SDRM		Ground
CN113-2	BMD[0]	SDRM		Data Signal

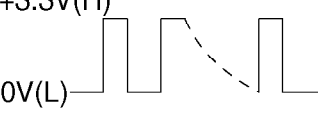
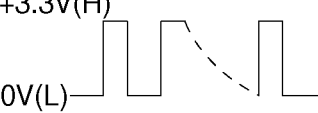

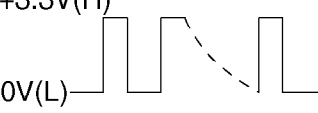
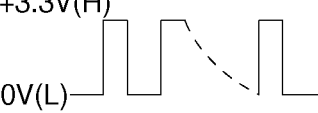
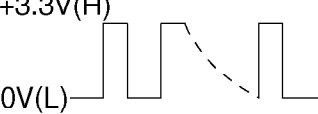
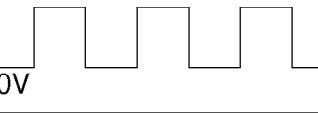
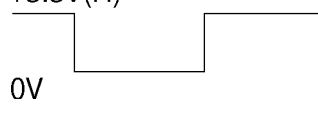
SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN113-3	BMD[1]	SDRM		Data Signal
CN113-4	BMD[2]	SDRM		Data Signal
CN113-5	BMD[3]	SDRM		Data Signal
CN113-6	BMD[4]	SDRM		Data Signal
CN113-7	BMD[5]	SDRM		Data Signal
CN113-8	BMD[6]	SDRM		Data Signal
CN113-9	BMD[7]	SDRM		Data Signal
CN113-10	+3.3V	SDRM		+3.3 VDC Power Supply
CN113-11	nBDQMH	SDRM		Input/Output Mask Signal
CN113-12	BMA[0]	SDRM		Address Signal
CN113-13	BMA[1]	SDRM		Address Signal

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN113-14	BMA[2]	SDRM	+3.3V(H) 	Address Signal
CN113-15	BMA[3]	SDRM	+3.3V(H) 	Address Signal
CN113-16	BMA[4]	SDRM	+3.3V(H) 	Address Signal
CN113-17	BMA[5]	SDRM	+3.3V(H) 	Address Signal
CN113-18	BMA[6]	SDRM	+3.3V(H) 	Address Signal
CN113-19	BMA[10]	SDRM	+3.3V(H) 	Address Signal
CN113-20	BMA[11]	SDRM	+3.3V(H) 	Address Signal
CN113-21	BMD[8]	SDRM	+3.3V(H) 0V(L) 	Data Signal
CN113-22	BMD[9]	SDRM	+3.3V(H) 0V(L) 	Data Signal
CN113-23	BMD[10]	SDRM	+3.3V(H) 0V(L) 	Data Signal
CN113-24	BMD[11]	SDRM	+3.3V(H) 0V(L) 	Data Signal

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN113-25	BMD[12]	SDRM		Data Signal
CN113-26	BMD[13]	SDRM		Data Signal
CN113-27	BMD[14]	SDRM		Data Signal
CN113-28	BMA[7]	SDRM		Address Signal
CN113-29	BMA[12]	SDRM		Address Signal
CN113-30	+3.3V	SDRM		+3.3 VDC Power Supply
CN113-31	BMA[8]	SDRM		Address Signal
CN113-32	BMA[9]	SDRM		Address Signal
CN113-33	BBA[0]	SDRM		S-DRAM Memory Area Switching Signal
CN113-34	BBA[1]	SDRM		S-DRAM Memory Area Switching Signal
CN113-35	BMD[15]	SDRM		Data Signal

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN113-36	nBDQML	SDRM		Input/Output Mask Signal
CN113-37	BMD[37]	SDRM		Data Signal
CN113-38	BMD[38]	SDRM		Data Signal
CN113-39	GND	SDRM		Ground
CN113-40	N.C.	SDRM		Not Used
CN113-41	N.C.	SDRM		Not Used
CN113-42	nBCS[2]	SDRM		Chip Select Signal
CN113-43	nBCS[3]	SDRM		Chip Select Signal
CN113-44	nBCS[4]	SDRM		Chip Select Signal
CN113-45	nBCS[5]	SDRM		Chip Select Signal
CN113-46	nBRAS	SDRM		S-DRAM Row Address Strobe Command
CN113-47	nBMWT	SDRM		S-DRAM Write Enable H: Write Disable L: Write Enable

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN113-48	nBCAS	SDRM		S-DRAM Column Address Strobe Command
CN113-49	BMD[18]	SDRM		Data Signal
CN113-50	BMD[19]	SDRM		Data Signal
CN113-51	BMD[20]	SDRM		Data Signal
CN113-52	BMD[21]	SDRM		Data Signal
CN113-53	BMD[22]	SDRM		Data Signal
CN113-54	BMD[23]	SDRM		Data Signal
CN113-55	BDCLK[0]	SDRM		S-DRAM Access Clock
CN113-56	BMD[24]	SDRM		Data Signal
CN113-57	BMD[25]	SDRM		Data Signal
CN113-58	BMD[26]	SDRM		Data Signal

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN113-59	BMD[27]	SDRM		Data Signal
CN113-60	BMD[28]	SDRM		Data Signal
CN113-61	+3.3V	SDRM		+3.3 VDC Power Supply
CN113-62	BMD[29]	SDRM		Data Signal
CN113-63	BMD[30]	SDRM		Data Signal
CN113-64	BMD[31]	SDRM		Data Signal
CN113-65	BDCLK[1]	SDRM		S-DRAM Access Clock
CN113-66	N.C.	SDRM		Not Used
CN113-67	nBCKE	SDRM		S-DRAM Clock Enable



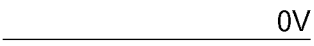

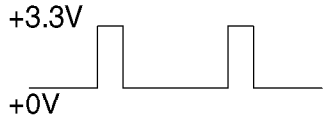
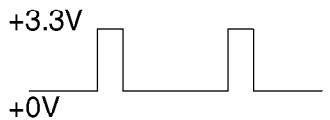
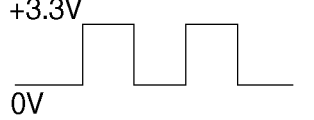
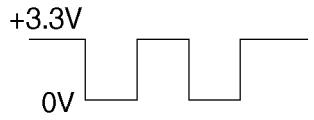
SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function																									
CN113-68	SMEMID[0]	SDRM	<div><div>+3.3V(H)</div><div>or</div><div>0V(L)</div></div>	Memory ID <table><tr><td>ID0</td><td>ID1</td><td>ID2</td><td>ID3</td><td></td></tr><tr><td>H</td><td>H</td><td>H</td><td>H</td><td>Not Installed</td></tr><tr><td>L</td><td>H</td><td>H</td><td>H</td><td>8MB</td></tr><tr><td>L</td><td>H</td><td>H</td><td>L</td><td>16MB</td></tr><tr><td>L</td><td>H</td><td>L</td><td>H</td><td>128MB</td></tr></table>	ID0	ID1	ID2	ID3		H	H	H	H	Not Installed	L	H	H	H	8MB	L	H	H	L	16MB	L	H	L	H	128MB
ID0	ID1	ID2	ID3																										
H	H	H	H	Not Installed																									
L	H	H	H	8MB																									
L	H	H	L	16MB																									
L	H	L	H	128MB																									
CN113-69	SMEMID[1]	SDRM	<div><div>+3.3V(H)</div><div>or</div><div>0V(L)</div></div>																										
CN113-70	SMEMID[2]	SDRM	<div><div>+3.3V(H)</div><div>or</div><div>0V(L)</div></div>																										
CN113-71	SMEMID[3]	SDRM	<div><div>+3.3V(H)</div><div>or</div><div>0V(L)</div></div>																										
CN113-72	GND	SDRM	<div><div>0V</div></div>	Ground																									

**CN114 (Except DP-1510P/1810P)**

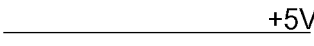
SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN114-1	L2 (T)	MJR PCB CN22-1		Line Signal
CN114-2	N.C.			Not Used
CN114-3	L1 (R)	MJR PCB CN22-3		Line Signal


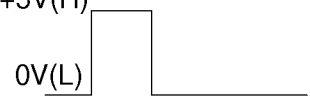
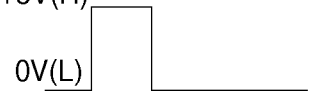
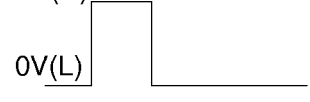
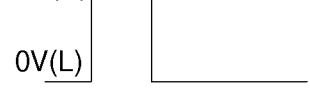





**CN120**


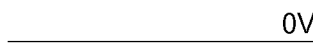
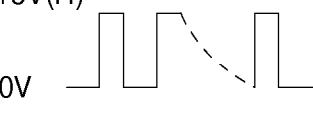
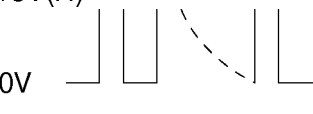
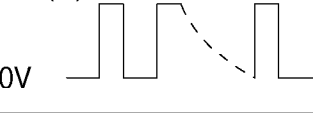
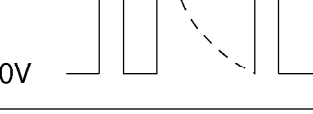
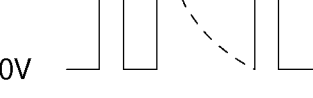
SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN120-1	+5V	CCD PCB CN51-2	<div> <div>+5V</div> </div>	+5 VDC Power Supply
CN120-2	GND	CCD PCB CN51-1	<div> <div>0V</div> </div>	Ground

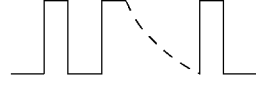


SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN120-3	GND	CCD PCB CN51-6		Ground
CN120-4	FSH	CCD PCB CN51-7		Transfer Gate Clock
CN120-5	N.C.			Not Used
CN120-6	FR	CCD PCB CN51-8		Reset Gate Clock
CN120-7	N.C.			Not Used
CN120-8	FCP	CCD PCB CN51-5		Clamp Clock
CN120-9	FCK1	CCD PCB CN51-3		Shift Register Clock
CN120-10	N.C.			Not Used
CN120-11	N.C.			Not Used
CN120-12	FCK2	CCD PCB CN51-4		Shift Register Clock

#### CN121

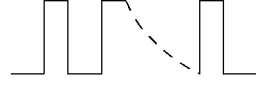








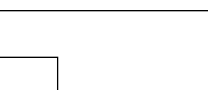
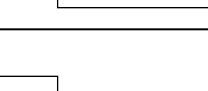
SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN121-1	+5VI	EP PCB CN1-1		+5 VDC Power Supply

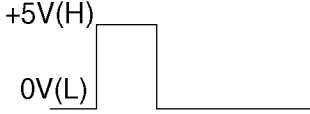



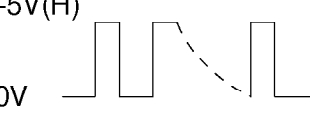
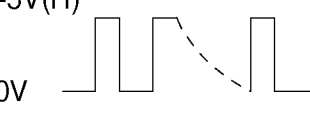
SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN121-2	+5V <sub>I</sub>	EP PCB CN1-2		+5 VDC Power Supply
CN121-3	AL[1]	EP PCB CN1-3		Address Signal
CN121-4	AL[2]	EP PCB CN1-4		Address Signal
CN121-5	AL[5]	EP PCB CN1-5		Address Signal
CN121-6	AL[6]	EP PCB CN1-6		Address Signal
CN121-7	AL[9]	EP PCB CN1-7		Address Signal
CN121-8	AL[10]	EP PCB CN1-8		Address Signal
CN121-9	nWAIT[5]	EP PCB CN1-9		BUS Wait Signal
CN121-10	N.C.	EP PCB CN1-10		Not Used
CN121-11	nCS08	EP PCB CN1-11		Chip Enable Signal H: Disable L: Enable
CN121-12	nCS0E	EP PCB CN1-12		Chip Enable Signal H: Disable L: Enable

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN121-13	nIOWRH	EP PCB CN1-13		I/O Write (High) Signal H: Write Disable L: Write Enable
CN121-14	GND	EP PCB CN1-14		Ground
CN121-15	N.C.	EP PCB CN1-15		Not Used
CN121-16	N.C.	EP PCB CN1-16		Not Used
CN121-17	N.C.	EP PCB CN1-17		Not Used
CN121-18	N.C.	EP PCB CN1-18		Not Used
CN121-19	IOD[0]	EP PCB CN1-19		Data Signal
CN121-20	IOD[1]	EP PCB CN1-20		Data Signal
CN121-21	IOD[4]	EP PCB CN1-21		Data Signal
CN121-22	IOD[5]	EP PCB CN1-22		Data Signal
CN121-23	IOD[8]	EP PCB CN1-23		Data Signal

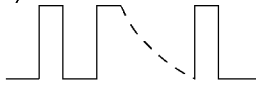
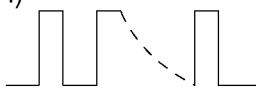




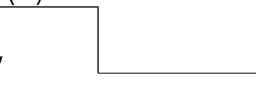
SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN121-24	IOD[9]	EP PCB CN1-24	+5V(H) 0V 	Data Signal
CN121-25	IOD[12]	EP PCB CN1-25	+5V(H) 0V 	Data Signal
CN121-26	IOD[13]	EP PCB CN1-26	+5V(H) 0V 	Data Signal
CN121-27	N.C.	EP PCB CN1-27		Not Used
CN121-28	N.C.	EP PCB CN1-28		Not Used
CN121-29	N.C.	EP PCB CN1-29		Not Used
CN121-30	N.C.	EP PCB CN1-30		Not Used
CN121-31	N.C.	EP PCB CN1-31		Not Used
CN121-32	N.C.	EP PCB CN1-32		Not Used
CN121-33	N.C.	EP PCB CN1-33		Not Used
CN121-34	N.C.	EP PCB CN1-34		Not Used
CN121-35	N.C.	EP PCB CN1-35		Not Used

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN121-36	nPDLOPT	EP PCB CN1-36		Option Detection Signal H: Option Not Installed L: Option Installed
CN121-37	pPDLREQ	EP PCB CN1-37		Direct Memory Access Data Request Signal H: Enable L: Disable
CN121-38	N.C.	EP PCB CN1-38		Not Used
CN121-39	PD[0]	EP PCB CN1-39		Data Signal
CN121-40	PD[1]	EP PCB CN1-40		Data Signal
CN121-41	PD[4]	EP PCB CN1-41		Data Signal
CN121-42	PD[5]	EP PCB CN1-42		Data Signal
CN121-43	GND	EP PCB CN1-43		Ground
CN121-44	GND	EP PCB CN1-44		Ground
CN121-45	PD[8]	EP PCB CN1-45		Data Signal
CN121-46	PD[9]	EP PCB CN1-46		Data Signal

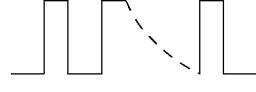





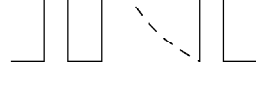

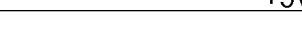
SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN121-47	PD[12]	EP PCB CN1-47	+5V(H) 0V 	Data Signal
CN121-48	PD[13]	EP PCB CN1-48	+5V(H) 0V 	Data Signal
CN121-49	GND	EP PCB CN1-49	 0V	Ground
CN121-50	GND	EP PCB CN1-50	 0V	Ground
CN121-51	GND	EP PCB CN1-51	 0V	Ground
CN121-52	GND	EP PCB CN1-52	 0V	Ground
CN121-53	AL[3]	EP PCB CN1-53	+5V(H) 0V(L) 	Address Signal
CN121-54	AL[4]	EP PCB CN1-54	+5V(H) 0V(L) 	Address Signal
CN121-55	AL[7]	EP PCB CN1-55	+5V(H) 0V(L) 	Address Signal
CN121-56	AL[8]	EP PCB CN1-56	+5V(H) 0V(L) 	Address Signal
CN121-57	AL[11]	EP PCB CN1-57	+5V(H) 0V(L) 	Address Signal

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN121-58	AL[12]	EP PCB CN1-58		Address Signal
CN121-59	N.C.	EP PCB CN1-59		Not Used
CN121-60	N.C.	EP PCB CN1-60		Not Used
CN121-61	nIORD	EP PCB CN1-61		I/O Read Signal H: Read Disable L: Read Enable
CN121-62	nIOWRL	EP PCB CN1-62		I/O Write (Low) Signal H: Write Disable L: Write Enable
CN121-63	nWAIT[1]	EP PCB CN1-63		Not Used
CN121-64	N.C.	EP PCB CN1-64		Not Used
CN121-65	N.C.	EP PCB CN1-65		Not Used
CN121-66	nMIRQPDL	EP PCB CN1-66		Interrupt Request Signal H: Disable L: Enable
CN121-67	IOD[2]	EP PCB CN1-67		Data Signal
CN121-68	IOD[3]	EP PCB CN1-68		Data Signal

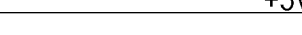



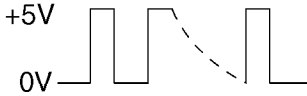
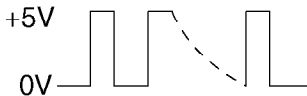
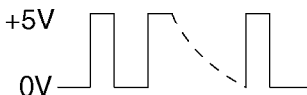
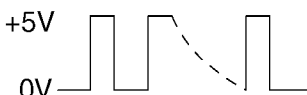
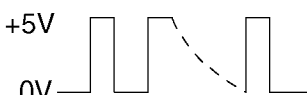
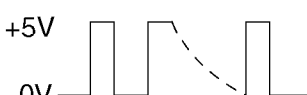

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN121-69	IOD[6]	EP PCB CN1-69	+5V(H) 0V 	Data Signal
CN121-70	IOD[7]	EP PCB CN1-70	+5V(H) 0V 	Data Signal
CN121-71	IOD[10]	EP PCB CN1-71	+5V(H) 0V 	Data Signal
CN121-72	IOD[11]	EP PCB CN1-72	+5V(H) 0V 	Data Signal
CN121-73	IOD[14]	EP PCB CN1-73	+5V(H) 0V 	Data Signal
CN121-74	IOD[15]	EP PCB CN1-74	+5V(H) 0V 	Data Signal
CN121-75	N.C.	EP PCB CN1-75		Not Used
CN121-76	N.C.	EP PCB CN1-76		Not Used
CN121-77	N.C.	EP PCB CN1-77		Not Used
CN121-78	N.C.	EP PCB CN1-78		Not Used
CN121-79	nPSDES	EP PCB CN1-79	+5V(H) 0V 	Energy Saver Mode Disable Signal

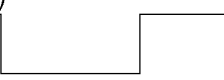


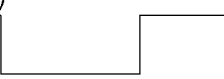



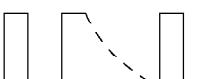

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN121-80	N.C.	EP PCB CN1-80		Not Used
CN121-81	nOPON	EP PCB CN1-81		Option Detection Signal H: Option Not Installed L: Option Installed
CN121-82	N.C.	EP PCB CN1-82		Not Used
CN121-83	N.C.	EP PCB CN1-83		Not Used
CN121-84	GND	EP PCB CN1-84		Ground
CN121-85	GND	EP PCB CN1-85		Ground
CN121-86	GND	EP PCB CN1-86		Ground
CN121-87	n5VPDLRD	EP PCB CN1-87		Read Signal
CN121-88	nPDLRST	EP PCB CN1-88		Reset Signal H: Not Reset L: Reset
CN121-89	PD[2]	EP PCB CN1-89		Data Signal
CN121-90	PD[3]	EP PCB CN1-90		Data Signal
CN121-91	PD[6]	EP PCB CN1-91		Data Signal

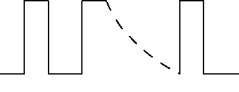
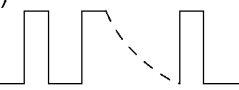




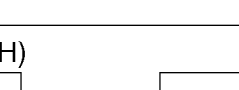
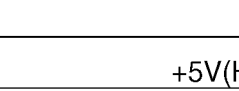
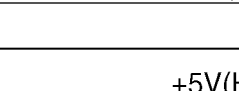
SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN121-92	PD[7]	EP PCB CN1-92	+5V(H) 0V 	Data Signal
CN121-93	GND	EP PCB CN1-93	0V 	Ground
CN121-94	GND	EP PCB CN1-94	0V 	Ground
CN121-95	PD[10]	EP PCB CN1-95	+5V(H) 0V 	Data Signal
CN121-96	PD[11]	EP PCB CN1-96	+5V(H) 0V 	Data Signal
CN121-97	PD[14]	EP PCB CN1-97	+5V(H) 0V 	Data Signal
CN121-98	PD[15]	EP PCB CN1-98	+5V(H) 0V 	Data Signal
CN121-99	+5V	EP PCB CN1-99	+5V 	+5 VDC Power Supply
CN121-100	+5V	EP PCB CN1-100	+5V 	+5 VDC Power Supply





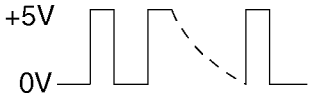
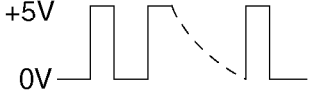
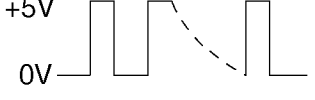
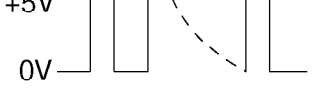
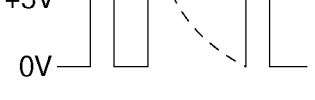
#### CN123

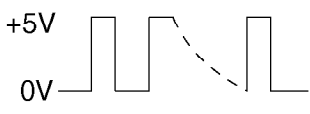

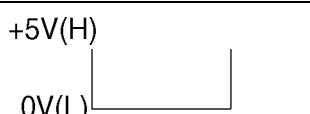

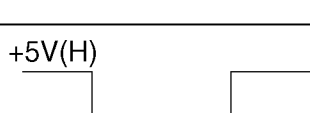
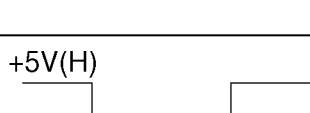
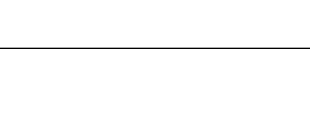
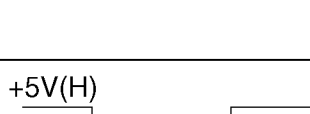
SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN123-1	+5VI	G3B PCB CN131-1 or LANB PCB CN2-1	+5V 	+5 VDC Power Supply

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN123-2	+5Vl	G3B PCB CN131-2 or LANB PCB CN2-2		+5 VDC Power Supply
CN123-3	AL[1]	G3B PCB CN131-3 or LANB PCB CN2-3		Address Signal
CN123-4	AL[2]	G3B PCB CN131-4 or LANB PCB CN2-4		Address Signal
CN123-5	AL[5]	G3B PCB CN131-5 or LANB PCB CN2-5		Address Signal
CN123-6	AL[6]	G3B PCB CN131-6 or LANB PCB CN2-6		Address Signal
CN123-7	AL[9]	G3B PCB CN131-7 or LANB PCB CN2-7		Address Signal
CN123-8	AL[10]	G3B PCB CN131-8 or LANB PCB CN2-8		Address Signal
CN123-9	N.C.	G3B PCB CN131-9 or LANB PCB CN2-9		Not Used
CN123-10	N.C.	G3B PCB CN131-10 or LANB PCB CN2-10		Not Used
CN123-11	nCS08	G3B PCB CN131-11 or LANB PCB CN2-11		Chip Enable Signal H: Disable L: Enable

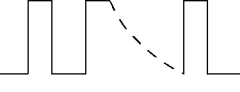
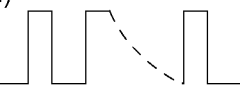



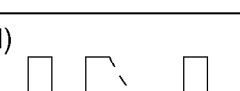
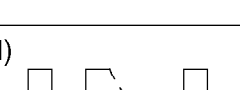
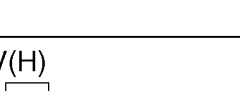
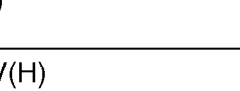
SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN123-12	nCS0E	G3B PCB CN131-12 or LANB PCB CN2-12	+5V(H) 0V(L) 	Chip Enable Signal H: Disable L: Enable
CN123-13	nIOWRH	G3B PCB CN131-13 or LANB PCB CN2-13	+5V(H) 0V(L) 	I/O Write (High) Signal H: Write Disable L: Write Enable
CN123-14	GND	G3B PCB CN131-14 or LANB PCB CN2-14	0V 	Ground
CN123-15	nIRQOP1	G3B PCB CN131-15 or LANB PCB CN2-15	+5V(H) 0V(L) 	Interrupt Signal
CN123-16	nIRQOP2	G3B PCB CN131-16 or LANB PCB CN2-16	+5V(H) 0V(L) 	Interrupt Signal
CN123-17	N.C.	G3B PCB CN131-17 or LANB PCB CN2-17		Not Used
CN123-18	pOP1RST	G3B PCB CN131-18 or LANB PCB CN2-18	+3.3V(H) 0V(L) 	Reset Signal H: Reset L: Not Reset
CN123-19	IOD[0]	G3B PCB CN131-19 or LANB PCB CN2-19	+5V(H) 0V(L) 	Data Signal
CN123-20	IOD[1]	G3B PCB CN131-20 or LANB PCB CN2-20	+5V(H) 0V(L) 	Data Signal
CN123-21	IOD[4]	G3B PCB CN131-21 or LANB PCB CN2-21	+5V(H) 0V(L) 	Data Signal

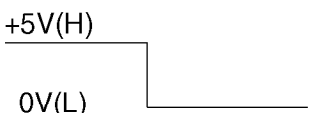
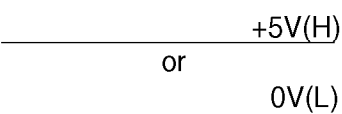



SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN123-22	IOD[5]	G3B PCB CN131-22 or LANB PCB CN2-22	+5V(H) 0V(L) 	Data Signal
CN123-23	IOD[8]	G3B PCB CN131-23 or LANB PCB CN2-23	+5V(H) 0V(L) 	Data Signal
CN123-24	IOD[9]	G3B PCB CN131-24 or LANB PCB CN2-24	+5V(H) 0V(L) 	Data Signal
CN123-25	IOD[12]	G3B PCB CN131-25 or LANB PCB CN2-25	+5V(H) 0V(L) 	Data Signal
CN123-26	IOD[13]	G3B PCB CN131-26 or LANB PCB CN2-26	+5V(H) 0V(L) 	Data Signal
CN123-27	nWAIT[2]	G3B PCB CN131-27 or LANB PCB CN2-27	+5V(H) 0V(L) 	BUS Wait Signal
CN123-28	nWAIT[3]	G3B PCB CN131-28 or LANB PCB CN2-28	+5V(H) 0V(L) 	BUS Wait Signal
CN123-29	nOPB1	G3B PCB CN131-29 or LANB PCB CN2-29	+5V(H) or 0V(L) 	Option Detection Signal H: Option Not Installed L: Option Installed
CN123-30	nOPB2	G3B PCB CN131-30 or LANB PCB CN2-30	+5V(H) or 0V(L) 	Option Detection Signal H: Option Not Installed L: Option Installed
CN123-31	N.C.	G3B PCB CN131-31 or LANB PCB CN2-31		Not Used

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN123-32	N.C.	G3B PCB CN131-32 or LANB PCB CN2-32		Not Used
CN123-33	+5VP	G3B PCB CN131-33 or LANB PCB CN2-33		+5 VDC Pilot Power Supply, that provides power to the active components during the Sleep Mode.
CN123-34	+24VF	G3B PCB CN131-34 or LANB PCB CN2-34		+24 VDC Power Supply
CN123-35	GND	G3B PCB CN131-35 or LANB PCB CN2-35		Ground
CN123-36	GND	G3B PCB CN131-36 or LANB PCB CN2-36		Ground
CN123-37	AL[3]	G3B PCB CN131-37 or LANB PCB CN2-37		Address Signal
CN123-38	AL[4]	G3B PCB CN131-38 or LANB PCB CN2-38		Address Signal
CN123-39	AL[7]	G3B PCB CN131-39 or LANB PCB CN2-39		Address Signal
CN123-40	AL[8]	G3B PCB CN131-40 or LANB PCB CN2-40		Address Signal
CN123-41	AL[11]	G3B PCB CN131-41 or LANB PCB CN2-41		Address Signal

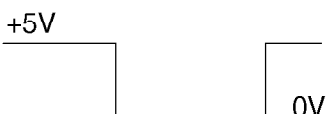
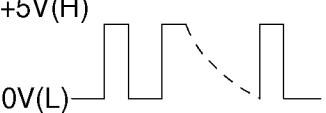

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN123-42	AL[12]	G3B PCB CN131-42 or LANB PCB CN2-42	+5V 0V 	Address Signal
CN123-43	nCS09	G3B PCB CN131-43 or LANB PCB CN2-43	+5V(H) 0V(L) 	Chip Enable Signal H: Disable L: Enable
CN123-44	nCS0A	G3B PCB CN131-44 or LANB PCB CN2-44	+5V(H) 0V(L) 	Chip Enable Signal H: Disable L: Enable
CN123-45	nIORD	G3B PCB CN131-45 or LANB PCB CN2-45	+5V(H) 0V(L) 	I/O Read Signal H: Read Disable L: Read Enable
CN123-46	nIOWRL	G3B PCB CN131-46 or LANB PCB CN2-46	+5V(H) 0V(L) 	I/O Write (Low) Signal H: Write Disable L: Write Enable
CN123-47	nWAIT[1]	G3B PCB CN131-47 or LANB PCB CN2-47	+5V(H) 0V(L) 	BUS Wait Signal
CN123-48	N.C.	G3B PCB CN131-48 or LANB PCB CN2-48		Not Used
CN123-49	nIRQOP3	G3B PCB CN131-49 or LANB PCB CN2-49	+5V(H) 0V(L) 	Interrupt Signal
CN123-50	N.C.	G3B PCB CN131-50 or LANB PCB CN2-50		Not Used
CN123-51	IOD[2]	G3B PCB CN131-51 or LANB PCB CN2-51	+5V(H) 0V(L) 	Data Signal

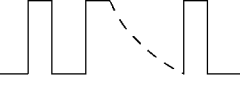


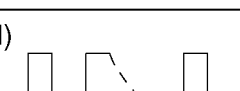
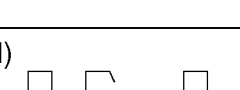


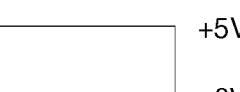
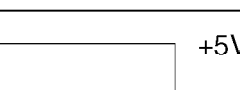
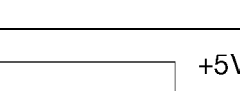
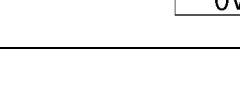


SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN123-52	IOD[3]	G3B PCB CN131-52 or LANB PCB CN2-52	+5V(H)  0V(L)	Data Signal
CN123-53	IOD[6]	G3B PCB CN131-53 or LANB PCB CN2-53	+5V(H)  0V(L)	Data Signal
CN123-54	IOD[7]	G3B PCB CN131-54 or LANB PCB CN2-54	+5V(H)  0V(L)	Data Signal
CN123-55	IOD[10]	G3B PCB CN131-55 or LANB PCB CN2-55	+5V(H)  0V(L)	Data Signal
CN123-56	IOD[11]	G3B PCB CN131-56 or LANB PCB CN2-56	+5V(H)  0V(L)	Data Signal
CN123-57	IOD[14]	G3B PCB CN131-57 or LANB PCB CN2-57	+5V(H)  0V(L)	Data Signal
CN123-58	IOD[15]	G3B PCB CN131-58 or LANB PCB CN2-58	+5V(H)  0V(L)	Data Signal
CN123-59	pOP2RST	G3B PCB CN131-59 or LANB PCB CN2-59	+3.3V(H)  0V(L)	Reset Signal H: Reset L: Not Reset
CN123-60	pOP3RST	G3B PCB CN131-60 or LANB PCB CN2-60	+3.3V(H)  0V(L)	Reset Signal H: Reset L: Not Reset
CN123-61	nOPB3	G3B PCB CN131-61 or LANB PCB CN2-61	+5V(H) or 0V(L)	Option Detection Signal L: Option Not Installed H: Option Installed

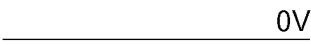

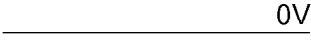

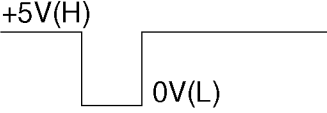
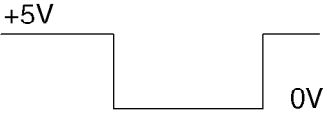

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN123-62	N.C.	G3B PCB CN131-62 or LANB PCB CN2-62		Not Used
CN123-63	nPSDES	G3B PCB CN131-63 or LANB PCB CN2-63		Energy Saver Mode Disable Signal
CN123-64	N.C.	G3B PCB CN131-64 or LANB PCB CN2-64		Not Used
CN123-65	nOPON	G3B PCB CN131-65 or LANB PCB CN2-65		Option Detection Signal H: Option Not Installed L: Option Installed
CN123-66	+3.3V	G3B PCB CN131-66 or LANB PCB CN2-66		+3.3 VDC Power Supply
CN123-67	-12V	G3B PCB CN131-67 or LANB PCB CN2-67		-12 VDC Power Supply
CN123-68	AGND	G3B PCB CN131-68 or LANB PCB CN2-68		Ground

## CN220

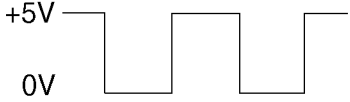
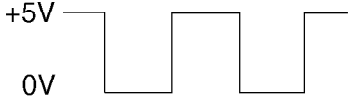
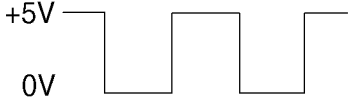
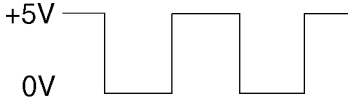
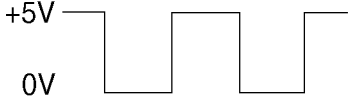
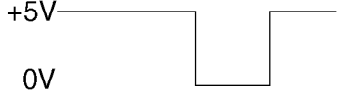
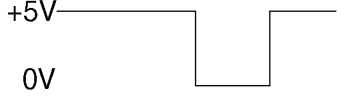
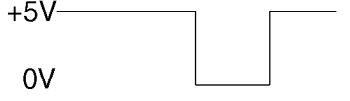
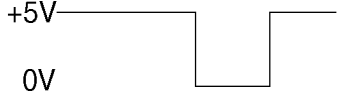
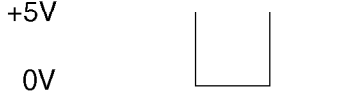
SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN220-1	nSTB	Centronics I/F		Host Clock / Data Transfer Strobe (Host→Peripheral)
CN220-2	DATA0	Centronics I/F		Data Signal
CN220-3	DATA1	Centronics I/F		Data Signal

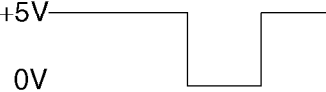
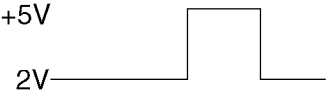
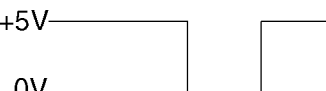



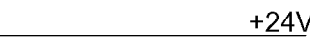
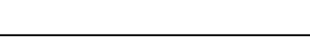
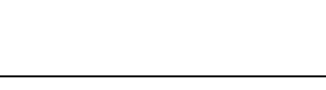
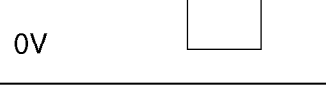
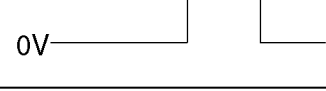
SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN220-4	DATA2	Centronics I/F	+5V(H) 0V(L) 	Data Signal
CN220-5	DATA3	Centronics I/F	+5V(H) 0V(L) 	Data Signal
CN220-6	DATA4	Centronics I/F	+5V(H) 0V(L) 	Data Signal
CN220-7	DATA5	Centronics I/F	+5V(H) 0V(L) 	Data Signal
CN220-8	DATA6	Centronics I/F	+5V(H) 0V(L) 	Data Signal
CN220-9	DATA7	Centronics I/F	+5V(H) 0V(L) 	Data Signal
CN220-10	nACK	Centronics I/F	+5V 0V 	Peripheral Clock / Data Transfer Acknowledge (Peripheral→Host)
CN220-11	BUSY	Centronics I/F	+5V 0V 	Peripheral Busy (Peripheral→Host)
CN220-12	PE	Centronics I/F	+5V 0V 	Acknowledge Data Request / Paper Empty Condition (Peripheral→Host)
CN220-13	SELECT	Centronics I/F	+5V 0V 	Select Signal (Peripheral→Host)
CN220-14	nAUTOFD	Centronics I/F	+5V 0V 	Host Busy (Host→Peripheral)

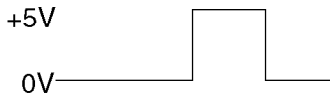
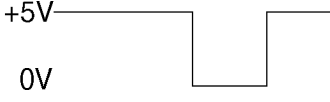
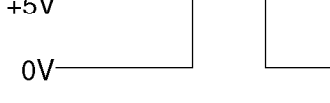
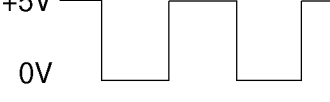
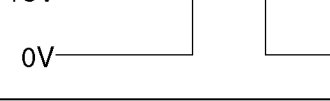

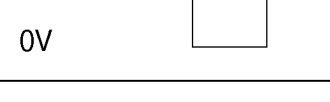
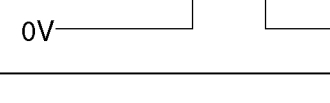
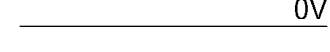
SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN220-15	Not Used	Centronics I/F		Not Used
CN220-16	GND	Centronics I/F	_____0V	Ground
CN220-17	FG	Centronics I/F	_____0V	Ground
CN220-18	PLH	Centronics I/F	_____+5V	+5V Pull Up
CN220-19	GND	Centronics I/F	_____0V	Ground
CN220-20	GND	Centronics I/F	_____0V	Ground
CN220-21	GND	Centronics I/F	_____0V	Ground
CN220-22	GND	Centronics I/F	_____0V	Ground
CN220-23	GND	Centronics I/F	_____0V	Ground
CN220-24	GND	Centronics I/F	_____0V	Ground
CN220-25	GND	Centronics I/F	_____0V	Ground
CN220-26	GND	Centronics I/F	_____0V	Ground

SC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN220-27	GND	Centronics I/F		Ground
CN220-28	GND	Centronics I/F		Ground
CN220-29	GND	Centronics I/F		Ground
CN220-30	GND	Centronics I/F		Ground
CN220-31	nINIT	Centronics I/F		Reverse Request / Initialize (Host→Peripheral)
CN220-32	nFAULT	Centronics I/F		Data Available / Error Condition (Peripheral→Host)
CN220-33	Not Used	Centronics I/F		Not Used
CN220-34	Not Used	Centronics I/F		Not Used
CN220-35	Not Used	Centronics I/F		Not Used
CN220-36	nSELIN	Centronics I/F		IEEE1284 Active (Host→Peripheral)

### 3.7. PNL6-1 PC Board CN1

PNL6-1 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN1-1	SCN[2]	PNL2 PCB CN20-1		Key Scan Signal
CN1-2	SCN[1]	PNL2 PCB CN20-2		Key Scan Signal
CN1-3	SCN[3]	PNL2 PCB CN20-3		Key Scan Signal
CN1-4	SCN[0]	PNL2 PCB CN20-4		Key Scan Signal
CN1-5	SCN[4]	PNL2 PCB CN20-5		Key Scan Signal
CN1-6	KIN[7]	PNL2 PCB CN20-6		Key Scan Signal
CN1-7	KIN[6]	PNL2 PCB CN20-7		Key Scan Signal
CN1-8	nLEDCT[2]	PNL2 PCB CN20-8		LED Control
CN1-9	KIN[5]	PNL2 PCB CN20-9		Key Scan Signal
CN1-10	nLEDCT[1]	PNL2 PCB CN20-10		LED Control

PNL6-1 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN1-11	KIN[4]	PNL2 PCB CN20-11		Key Scan Signal
CN1-12	pLED[1]	PNL2 PCB CN20-12		LED Data H: ON
CN1-13	KIN[3]	PNL2 PCB CN20-13		Key Scan Signal
CN1-14	pLED[0]	PNL2 PCB CN20-14		LED Data H: ON
CN1-15	KIN[1]	PNL2 PCB CN20-15		Key Scan Signal
CN1-16	pLED[2]	PNL2 PCB CN20-16		LED Data H: ON
CN1-17	+24V	PNL2 PCB CN20-17		+24 VDC Power Supply
CN1-18	+5VP	PNL2 PCB CN20-18		+5 VDC Power Supply
CN1-19	nLEDCT[0]	PNL2 PCB CN20-19		LED Control
CN1-20	SWCT0	PNL2 PCB CN20-20		One Touch Choice H: ON
CN1-21	KIN[0]	PNL2 PCB CN20-21		Key Scan Signal

PNL6-1 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN1-22	SWCT1	PNL2 PCB CN20-22		One Touch Choice H: ON
CN1-23	KIN[2]	PNL2 PCB CN20-23		Key Scan Signal
CN1-24	BLCNT2	PNL2 PCB CN20-24		LED Control H: ON
CN1-25	SCN[5]	PNL2 PCB CN20-25		Key Scan Signal
CN1-26	TLCNT	PNL2 PCB CN20-26		Energy Saver LED H: ON
CN1-27	+5V	PNL2 PCB CN20-27		+5 VDC Power Supply
CN1-28	nPWSW	PNL2 PCB CN20-28		Energy Saver LED L: ON
CN1-29	BLCNT1	PNL2 PCB CN20-29		LED Control H: ON
CN1-30	GND	PNL2 PCB CN20-30		Ground

## CN201

Refer to SC PC Board CN108.

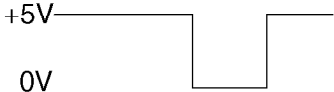
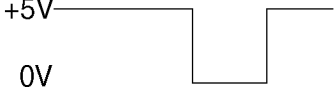
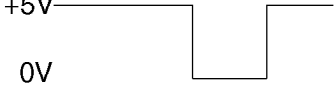
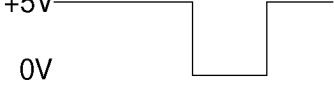
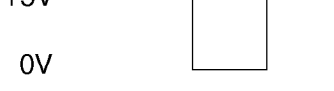


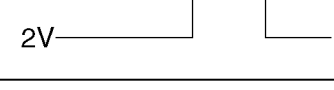
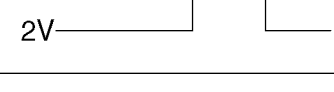
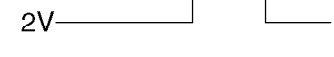


## CN202

PNL6-1 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN202-1	BAT/BUZCLK	PNL6-2 PCB CN210-1		Battery Voltage Buzzer Clock
CN202-2	GND	PNL6-2 PCB CN210-2		Ground
CN202-3	SCN[6]	PNL6-2 PCB CN210-3		Key Scan Signal
CN202-4	SCN[7]	PNL6-2 PCB CN210-4		Key Scan Signal
CN202-5	SCN[8]	PNL6-2 PCB CN210-5		Key Scan Signal

## CN203

PNL6-1 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN203-1	KIN[4]	PNL6-2 PCB CN211-1		Key Scan Signal
CN203-2	KIN[4]	PNL6-2 PCB CN211-2		Key Scan Signal
CN203-3	KIN[5]	PNL6-2 PCB CN211-3		Key Scan Signal
CN203-4	KIN[6]	PNL6-2 PCB CN211-4		Key Scan Signal
CN203-5	KIN[7]	PNL6-2 PCB CN211-5		Key Scan Signal

PNL6-1 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN203-6	nLEDCT[0]	PNL6-2 PCB CN211-6		LED Control
CN203-7	nLEDCT[1]	PNL6-2 PCB CN211-7		LED Control
CN203-8	nLEDCT[2]	PNL6-2 PCB CN211-8		LED Control
CN203-9	nLEDCT[3]	PNL6-2 PCB CN211-9		LED Control
CN203-10	nLEDCT[4]	PNL6-2 PCB CN211-10		LED Control
CN203-11	pLED[4]	PNL6-2 PCB CN211-11		LED Data H: ON
CN203-12	pLED[5]	PNL6-2 PCB CN211-12		LED Data H: ON
CN203-13	pLED[6]	PNL6-2 PCB CN211-13		LED Data H: ON
CN203-14	pLED[7]	PNL6-2 PCB CN211-14		LED Data H: ON
CN203-15	pLED[7]	PNL6-2 PCB CN211-15		LED Data H: ON

### **3.8. PNL6-2 PC Board**

#### **CN210**

Refer to PNL6-1 PC Board CN202.

#### **CN211**




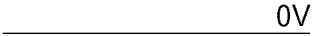


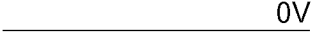

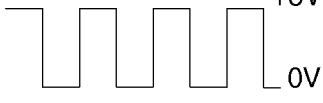

Refer to PNL6-1 PC Board CN203.


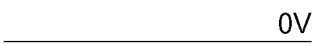

### **3.9. PNL2 PC Board CN20**

Refer to PNL6-1 PC Board CN1.

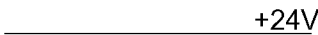
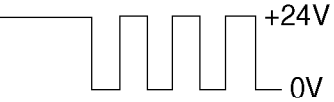
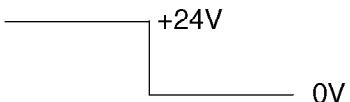
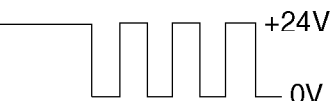
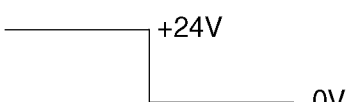
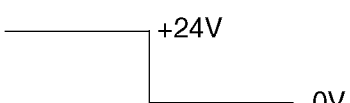
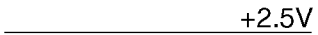

### 3.10. LPC3 PC Board

#### CN701



LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN701-1	L+5V	LSU CN811-1		Laser Circuit +5 VDC Power Supply
CN701-2-4	N.C.			Not Used
CN701-5	nS/H	LSU CN811-3		Sample Hold Signal
CN701-6	nHSYNC	LSU CN811-4		Horizontal Synchronous Signal
CN701-7	MGND	LSU CN811-5		Ground
CN701-8	nLDON	LSU CN811-6		Laser Control
CN701-9	pLDCTL	LSU CN811-7		Laser Control
CN701-10	MGND	LSU CN811-8		Ground
CN701-11	LASERPOW	LSU CN811-9		Laser Power Control
CN701-12	PMCK	LSU CN3-1		Polygon Motor Clock
CN701-13	nPMRDY	LSU CN3-2		Polygon Motor Ready Signal

LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN701-14	nPMON	LSU CN3-3		Polygon Motor Rotation Signal
CN701-15	MGND	LSU CN3-4		Ground
CN701-16	+24V	LSU CN3-5		+24 VDC Power Supply

## CN702

LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN702-1	+24VM	HVPS CN800-1		+24 VDC Power Supply
CN702-2	CR0	HVPS CN800-2		Charge Control DC Output
CN702-3	CR1	HVPS CN800-3		Charge Control DC Output
CN702-4	DR0	HVPS CN800-4		Development Control AC+DC Output
CN702-5	TR0	HVPS CN800-5		Transfer Control Cleaning Output
CN702-6	TR1	HVPS CN800-6		Transfer Control Transfer Output
CN702-7	TRCP	HVPS CN800-7		+2.5 VDC Power Supply
CN702-8	MGND	HVPS CN800-8		Ground

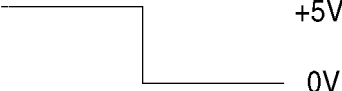



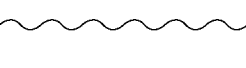
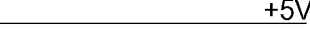
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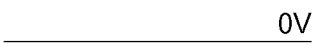
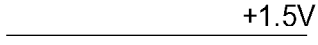
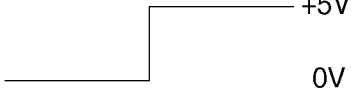


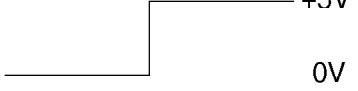
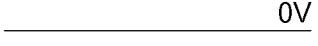
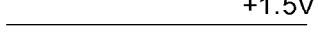
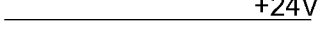
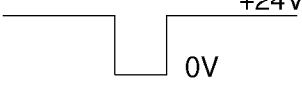
LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN703-1	+24V	ILS PC Board (Interlock Switch)	 +24V	+24 VDC Power Supply
CN703-2	N.C.			Not Used
CN703-3	+24VD1	ILS PC Board (Interlock Switch)	 +24V	+24 VDC Power Supply

### CN704

Refer to SC PC Board CN100.



### CN705

LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN705-1	N.C.			Not Used
CN705-2	nMFCK	Sheet Bypass Sensor 2-1	 +5V 0V	Sheet Bypass Paper Detection Signal L: Detect
CN705-3	GND	Sheet Bypass Sensor 2-2	 0V	Ground
CN705-4	LDMFP	Sheet Bypass Sensor 2-3	 +1.5V	Photo Sensor DC Drive Voltage
CN705-5	GND	Toner Sensor	 0V	Ground
CN705-6	TONERSEN	Toner Sensor	 5V 0V	Toner Sensor Signal
CN705-7	+5V	Toner Sensor	 +5V	+5 VDC Power Supply



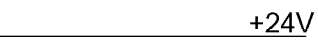



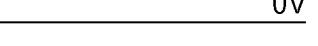
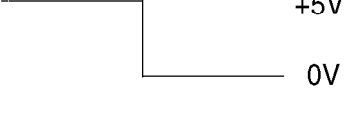
LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN705-8	nRSEN	Registration Sensor		Registration Sensor Signal
CN705-9	GND	Registration Sensor		Ground
CN705-10	LDRSEN	Registration Sensor		Photo Sensor DC Drive Voltage
CN705-11	nPCHK1	Paper Sensor		1st Paper Tray Paper Detection Signal L: Detect
CN705-12	GND	Paper Sensor		Ground
CN705-13	LDPS	Paper Sensor		Photo Sensor DC Drive Voltage
CN705-14	nUPLIMIT1	Upper Limit Sensor		Paper Level Signal (1st Feeder) L: Detect
CN705-15	GND	Upper Limit Sensor		Ground
CN705-16	LDUPL	Upper Limit Sensor		Photo Sensor DC Drive Voltage
CN705-17	+24VM	COUNTER		+24 VDC Power Supply
CN705-18	nCOUNT	COUNTER		Counter Drive Signal



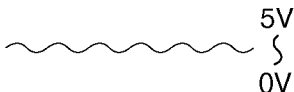

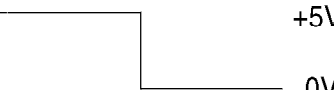
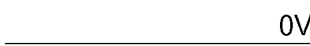

## CN706

LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN706-1	+24VM	Lift Motor		+24 VDC Power Supply
CN706-2	nLIFT1	Lift Motor		Lift DC Motor Ready Signal

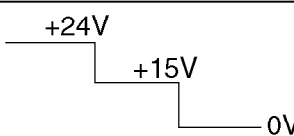

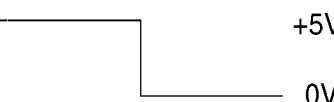
## CN707

LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN707-1	+24VM	Registration Roller Clutch-1		+24 VDC Power Supply
CN707-2	nRRCLH	Registration Roller Clutch-4		Registration Roller Drive Signal
CN707-3	+24VM	Feed Roller Clutch-1		+24 VDC Power Supply
CN707-4	nADF1	Feed Roller Clutch-4		Feed Roller Drive Signal
CN707-5	+24VM	Sheet Bypass Feed Roller Clutch-1		+24 VDC Power Supply
CN707-6	nHDF	Sheet Bypass Feed Roller Clutch-4		Sheet Bypass Feed Roller Drive Signal
CN707-7	GND	Paper Tray-1		Ground
CN707-8	nCASETT	Paper Tray-2		Paper Tray Detection Signal L: Detect

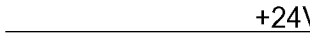
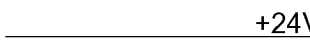
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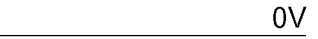


LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN708-1	THERM1	Thermistor-1		Thermistor Output Signal
CN708-2	THERM2	Thermistor-2		Ground
CN708-3	nESEN	Paper Exit Sensor-1		Inner Under Tray Paper Exit Signal
CN708-4	GND	Paper Exit Sensor-2		Ground
CN708-5	LDESEN	Paper Exit Sensor-3		Photo Sensor DC Drive Voltage

## CN709


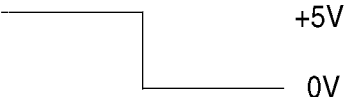

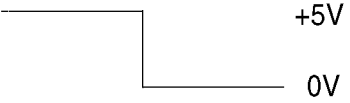
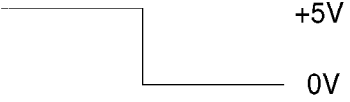
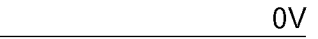

LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN709-1	+24V	Fan-1		Fan Control Signal 24V/15V
CN709-2	MGND	Fan-2		Ground
CN709-3	nFNRDT	Fan-3		Fan Ready Signal H: Not Ready L: Ready

## CN710







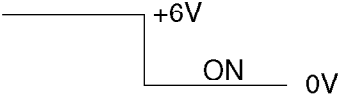
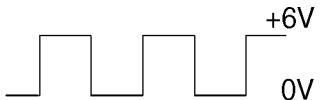
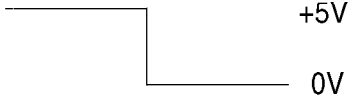
LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN710-1	+24V	LVPS CN62-1		+24 VDC Power Supply
CN710-2	+24V	LVPS CN62-2		+24 VDC Power Supply

LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN710-3	+24V	LVPS CN62-3	 +24V	+24 VDC Power Supply
CN710-4	MGND	LVPS CN62-4	 0V	Ground
CN710-5	MGND	LVPS CN62-5	 0V	Ground
CN710-6	MGND	LVPS CN62-6	 0V	Ground


#### CN711


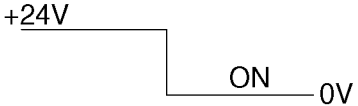
LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN711-1	+5V	SNS PCB-1	 +5V	+5 VDC Power Supply
CN711-2	nA3SEN	SNS PCB-2	 +5V 0V	Sheet Bypass Paper Size Detection Signal
CN711-3	GND	SNS PCB-3	 0V	Ground
CN711-4	nB4SENS	SNS PCB-4	 +5V 0V	Sheet Bypass Paper Detection Signal
CN711-5	nMFSEN4	Sheet Bypass Paper Length Sensor-1	 +5V 0V	Sheet Bypass Paper Length Detection Signal
CN711-6	GND	Sheet Bypass Paper Length Sensor-2	 0V	Ground
CN711-7	LDMF4	Sheet Bypass Paper Length Sensor-3	 +1.5V	Photo Sensor DC Drive Voltage

**CN712**

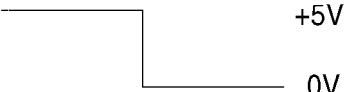



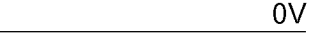
LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN712-1	+24VM	DC Motor-1		+24 VDC Power Supply
CN712-2	+24VM	DC Motor-2		+24 VDC Power Supply
CN712-3	MGND	DC Motor-3		Ground
CN712-4	MGND	DC Motor-4		Ground
CN712-5	GND	DC Motor-5		Ground
CN712-6	+5V	DC Motor-6		+5 VDC Power Supply
CN712-7	nMMON	DC Motor-7		DC Motor Rotation Control Signal
CN712-8	nMMCK	DC Motor-8		DC Motor Clock
CN712-9	F/R	DC Motor-9		Not Used
CN712-10	nMMRDY	DC Motor-10		Lift DC Motor Ready Signal

**CN713 (DP-2010E only)**


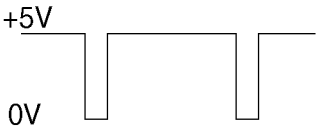
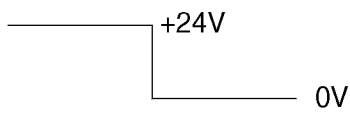
LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN713-1	nDUPKEP2	Keep Solenoid		Duplex Keep Solenoid Drive Signal



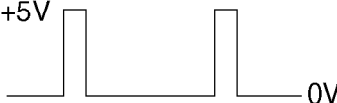
LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN713-2	+24VM	Keep Solenoid		+24 VDC Power Supply
CN713-3	nDUPSEN1	Keep Solenoid		Duplex Sensor1 Signal

#### CN714 (DP-2010E only)





LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN714-1	nDUPSEN1	Duplex Sensor1-1		Duplex Unit Paper Detection Signal L: Detect
CN714-2	GND	Duplex Sensor1-2		Ground
CN714-3	LDDUP2	Duplex Sensor1-3		Photo Sensor DC Drive Voltage
CN714-4	nOPDUP	LPC3 PCB CN714-5		Duplex Unit Detection H: Not Installed L: Installed
CN714-5	GND	LPC3 PCB CN714-4		Ground

#### CN715



LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN715-1	+5V	HTC PCB CN765-1		+5 VDC Power Supply
CN715-2	nSSR	HTC PCB CN765-2		Heater Control Signal
CN715-3	nACSW	HTC PCB CN765-3		Relay Control Signal

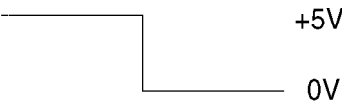
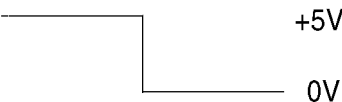


LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN715-4	+24VF4	HTC PCB CN765-4		+24 VDC Power Supply
CN715-5	GND	HTC PCB CN765-5		Ground
CN715-6	pZCIN	HTC PCB CN765-6		Heater Control Signal
CN715-7	N.C.			Not Used

#### CN716

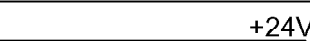
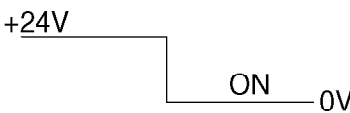
LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN716-1	+5V	LVPS CN62-7		+5 VDC Power Supply
CN716-2	+5V	LVPS CN62-8		+5 VDC Power Supply
CN716-3	GND	LVPS CN62-9		Ground
CN716-4	GND	LVPS CN62-10		Ground

#### CN722

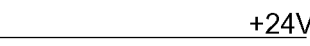
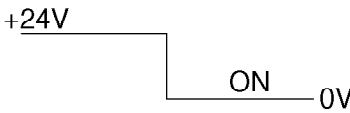
LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN722-1	GND	Toner Waste Sensor CN740-1		Ground
CN722-2	nOPRT	Toner Waste Sensor CN740-2		Toner Waste Sensor PCB Detection

LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN722-3	nBPSEN	Toner Waste Sensor CN740-3	 +5V 0V	Toner Waste Container Sensor H: Container Installed L: Container Not Installed
CN722-4	nTFSEN	Toner Waste Sensor CN740-4	 +5V 0V	Toner Waste Sensor H: Full L: Not Full
CN722-5	BPLED	Toner Waste Sensor CN740-5	 +1.5V	Photo Sensor DC Drive Voltage
CN722-6	TFLED	Toner Waste Sensor CN740-6	 +1.5V	Photo Sensor DC Drive Voltage


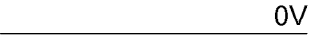
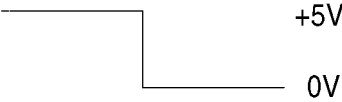
#### CN723

LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN723-1	+24VM	Toner Motor	 +24V	+24 VDC Power Supply
CN723-2	nTM	Toner Motor	 +24V ON 0V	Toner Bottle Motor Sensor




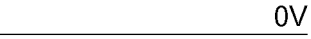

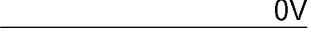
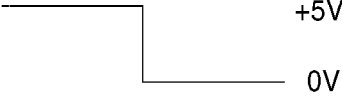
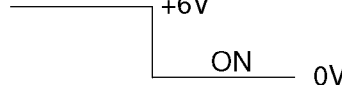
#### CN724

LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN724-1	+24VM	LSU Fan-1	 +24V	+24 VDC Power Supply
CN724-2	nLSFN	LSU Fan-3	 +24V ON 0V	LSU Fan Drive

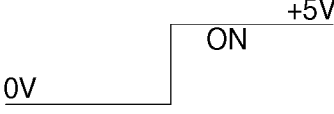
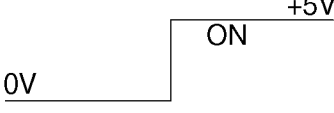
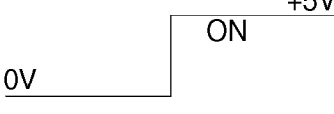
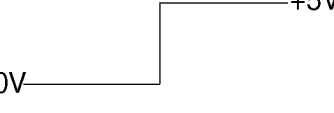
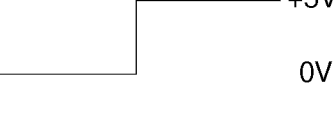
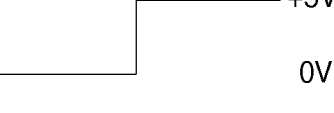
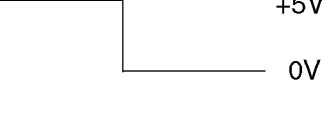
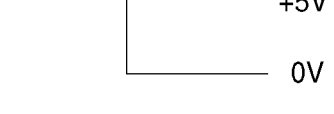
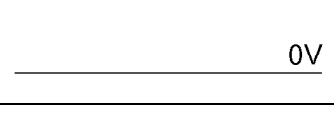
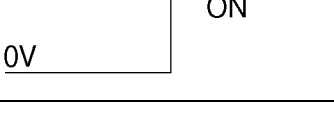
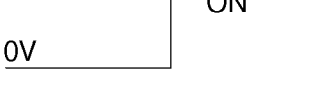
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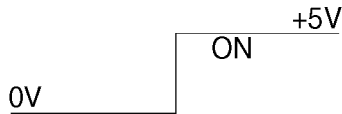
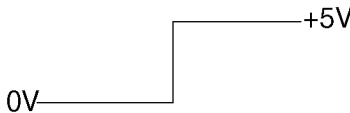
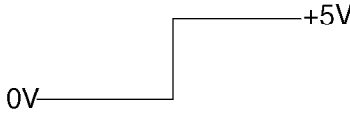
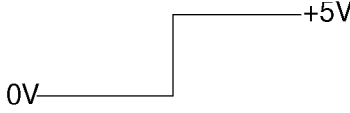
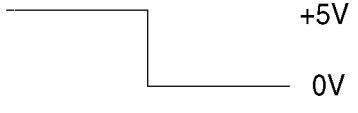
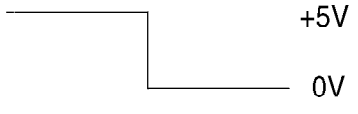

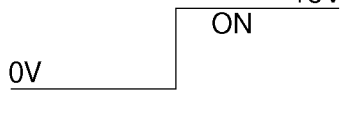
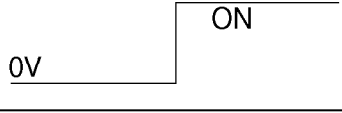
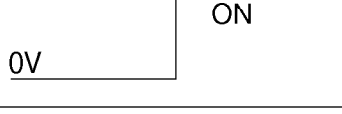

LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN726-1	pBTHP	Toner Bottle HP Sensor-1	 +1.5V	Photo Sensor DC Drive Voltage
CN726-2	GND	Toner Bottle HP Sensor-2	 0V	Ground
CN726-3	LDBTHP	Toner Bottle HP Sensor-3	 +5V 0V	Toner Bottle HP Sensor Signal L: Home Position

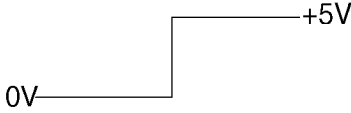
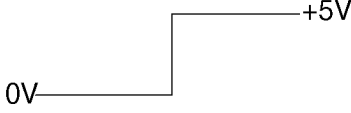
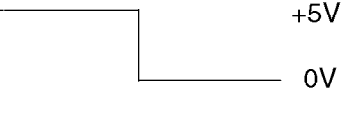
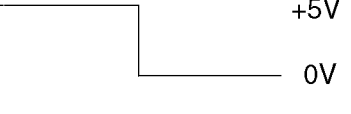
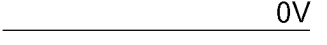
## CN731

LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN731-1	+24VM	CST4 PCB CN776-1	 +24V	+24 VDC Power Supply
CN731-2	MGND	CST4 PCB CN776-2	 0V	Ground
CN731-3	+24VM	CST4 PCB CN776-3	 +24V	+24 VDC Power Supply
CN731-4	MGND	CST4 PCB CN776-4	 0V	Ground
CN731-7	+5V	CST4 PCB CN776-7	 +5V	+5 VDC Power Supply
CN731-8	GND	CST4 PCB CN776-8	 0V	Ground
CN731-9	n3MRDY	CST4 PCB CN776-9	 +5V 0V	DC Motor Ready Signal
CN731-10	n3MONA	CST4 PCB CN776-10	 +6V ON 0V	DC Motor Rotation Control Signal



LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN731-11	pADF2A	CST4 PCB CN776-11		2nd Feed Roller Drive Signal
CN731-12	pMRCLH2A	CST4 PCB CN776-12		2nd Medium Roller Drive Signal
CN731-13	pLIFT2	CST4 PCB CN776-13		2nd Lift DC Motor Drive Signal
CN731-14	nPCHK2	CST4 PCB CN776-14		2nd Paper Tray Paper Detection Signal L: Detect
CN731-15	nCASET2	CST4 PCB CN776-15		2nd Paper Tray Detection Signal
CN731-16	pUPLIMIT2	CST4 PCB CN776-16		2nd Lift DC Motor Ready Signal
CN731-17	nFDPCHK2	CST4 PCB CN776-17		2nd Paper Tray Paper Registration Detection Signal L: Detect
CN731-18	nJAMDOR2	CST4 PCB CN776-18		2nd Paper Tray Jam Access Cover Open Detection Signal L: Detect
CN731-19	nCSTOP2	CST4 PCB CN776-19		2nd Paper Feed Module Detection Signal
CN731-20	pADF3A	CST4 PCB CN776-20		3rd Feed Roller Drive Signal
CN731-21	pMRCLH3A	CST4 PCB CN776-21		3rd Medium Roller Drive Signal

LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN731-22	pLIFT3	CST4 PCB CN776-22		3rd Lift DC Motor Drive Signal
CN731-23	nPCHK3	CST4 PCB CN776-23		3rd Paper Tray Paper Detection Signal L: Detect
CN731-24	nCASET3	CST4 PCB CN776-24		3rd Paper Tray Detection Signal
CN731-25	pUPLIMIT3	CST4 PCB CN776-25		3rd Lift DC Motor Ready Signal
CN731-26	nFDPCHK3	CST4 PCB CN776-26		3rd Paper Tray Paper Registration Detection Signal L: Detect
CN731-27	nJAMDOR3	CST4 PCB CN776-27		3rd Paper Tray Jam Access Cover Open Detection Signal L: Detect
CN731-28	nCSTOP3	CST4 PCB CN776-28		3rd Paper Feed Module Detection Signal
CN731-29	pADF4A	CST4 PCB CN776-29		4th Feed Roller Drive Signal
CN731-30	pMRCLH4A	CST4 PCB CN776-30		4th Medium Roller Drive Signal
CN731-31	pLIFT4	CST4 PCB CN776-31		4th Lift DC Motor Drive Signal
CN731-32	nPCHK4	CST4 PCB CN776-32		4th Paper Tray Paper Detection Signal L: Detect

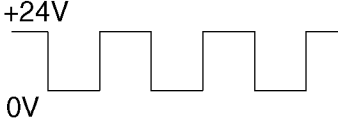
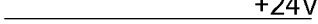
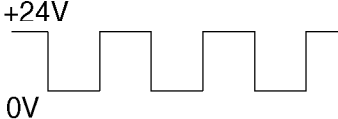
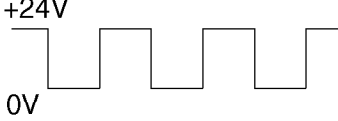

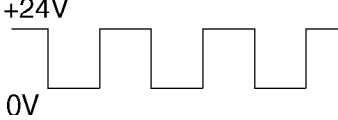

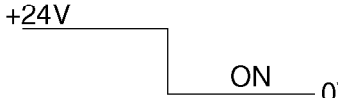
LPC3 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN731-33	nCASET4	CST4 PCB CN776-33		4th Paper Tray Detection Signal
CN731-34	pUPLIMIT4	CST4 PCB CN776-34		4th Lift DC Motor Ready Signal
CN731-35	nFDPCHK4	CST4 PCB CN776-35		4th Paper Tray Paper Registration Detection Signal L: Detect
CN731-36	nJAMDOR4	CST4 PCB CN776-36		4th Paper Tray Jam Access Cover Open Detection Signal L: Detect
CN731-37	nCSTOP4	CST4 PCB CN776-37		4th Paper Feed Module Detection Signal
CN731-38	N.C.			Not Used
CN731-39	N.C.			Not Used
CN731-40	N.C.			Not Used

### 3.11. ADF PC Board


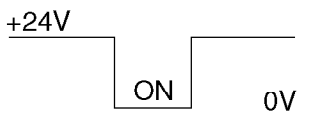
#### CN21

Refer to SC PC Board CN3.

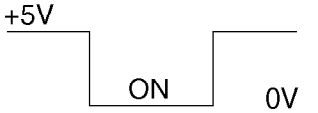


#### CN22

ADF PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN22-1	OUTA	ADF Motor-1		Motor Control Signal
CN22-2	+24V	ADF Motor-2		+24 VDC Power Supply
CN22-3	nOUTA	ADF Motor-3		Motor Control Signal
CN22-4	OUTB	ADF Motor-4		Motor Control Signal
CN22-5	+24V	ADF Motor-5		+24 VDC Power Supply
CN22-6	nOUTB	ADF Motor-6		Motor Control Signal
CN22-7	N.C.			Not Used
CN22-8	N.C.			Not Used
CN22-9	+24VOPF	Feed 2 Roller Clutch-1		+24 VDC Power Supply
CN22-10	nCCLH1	Feed 2 Roller Clutch-2		Feed 2 Roller Clutch Control Signal

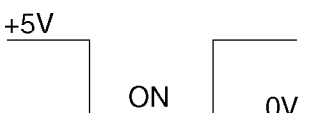


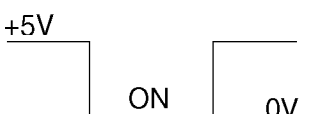

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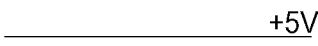
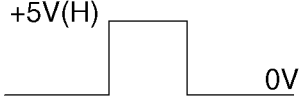
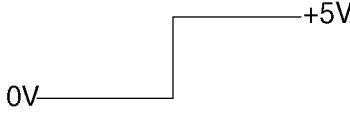

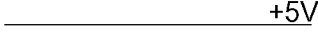
ADF PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN25-1	+24VOPF	Stamp Solenoid		+24 VDC Power Supply
CN25-2	nASTAMP	Stamp Solenoid		Stamp Control Signal

## CN27

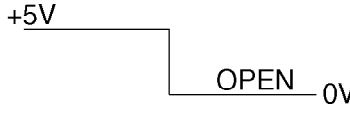
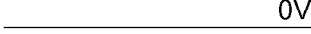
ADF PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN27-1	nAAPNT	Original Detection Sensor		Original Detection Signal L: Detect
CN27-2	GND	Original Detection Sensor		Ground
CN27-3	+5VP	Original Detection Sensor		+5 VDC Power Supply

## CN28

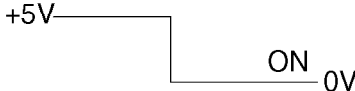


ADF PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN28-1	nAADL1	Original Length Sensor1		Original Length Detection Signal L: Detect
CN28-2	GND	Original Length Sensor1		Ground
CN28-3	+5V	Original Length Sensor1		+5 VDC Power Supply
CN28-4	nAADL2	Original Length Sensor2		Original Length Detection Signal L: Detect
CN28-5	GND	Original Length Sensor2		Ground

ADF PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN28-6	+5V	Original Length Sensor2		+5 VDC Power Supply
CN28-7	nAB4S	SNS PCB CN41-1		Original Width Detection Signal L: Detect
CN28-8	nAA3S	SNS PCB CN41-2		Original Width Detection Signal L: Detect
CN28-9	GND	SNS PCB CN41-4		Ground
CN28-10	+5V	SNS PCB CN41-3		+5 VDC Power Supply

#### CN29

ADF PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN29-1	N.C.			Not Used
CN29-2	N.C.			Not Used
CN29-3	N.C.			Not Used
CN29-4	pAB1SN	ADF Cover Open Detection Sensor		ADF Cover Open Detection Signal L: Detect
CN29-5	GND	ADF Cover Open Detection Sensor		Ground
CN29-6	N.C.			Not Used

**CN30**


ADF PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN30-1	N.C.			Not Used
CN30-2	N.C.			Not Used
CN30-3	N.C.			Not Used
CN30-4	nAB2SN	Duplex Eject Sensor		Duplex Eject Detection Signal L: Detect
CN30-5	GND	Duplex Eject Sensor		Ground
CN30-6	+5V	Duplex Eject Sensor		+5 VDC Power Supply
CN30-7	N.C.			Not Used
CN30-8	N.C.			Not Used
CN30-9	N.C.			Not Used

### 3.12. CCD PC Board

#### CN51

Refer to SC PC Board CN106 and CN120.

#### CN52

CCD PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN52-1	FGND	FG		Ground



### **3.13. LSU PC Board**

#### **CN810**


Refer to SC PC Board CN110.

#### **CN811, CN3**


Refer to LPC3 PC Board CN701.

### 3.14. HTC PC Board



#### CN760

HTC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN760	AC(L)	INLET-1		AC Power Supply


#### CN761

HTC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN761	AC(N)	INLET-3		AC Power Supply


#### CN762

HTC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN762-1	AC(L)	LVPS CN60-1		AC Power Supply
CN762-3	AC(N)	LVPS CN60-3		AC Power Supply

#### CN764

HTC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN764	AC(L)	Thermostat Thermal Fuse		AC Power Supply



#### CN765

HTC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN765	AC(N)	Fuser Lamp		AC Power Supply

#### CN766

Refer to LPC3 PC Board CN715.




**CN767**

HTC PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN767-1	AC(N)	CN48W03		AC Power Supply
CN767-2	AC(N)	CN48W03		AC Power Supply

### 3.15. HVPS

#### CN800

Refer to LPC3 PC Board CN702.

HVPS Pin No.	Signal Name	Destination	Signal Waveform	Function
HVPS T1	FER	Transfer Roller		Transfer Signal (High Voltage)
HVPS C	CHARGE	Charge Roller		Charge Signal (High Voltage)
HVPS D	DEVELOPMENT	Development Roller		Development Signal (High Voltage)

### **3.16. LVPS**

#### **CN60**

Refer to HTC PC Board CN762.

#### **CN61**

Refer to SC PC Board CN101.

#### **CN62**

Refer to LPC3 PC Board CN710 and CN716.

### **3.17. ILS PC Board CN750**

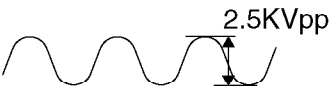
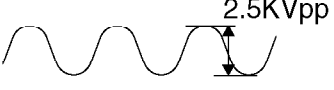
Refer to LPC3 PC Board CN703.

### 3.18. INV PC Board

#### CN1

Refer to SC PC Board CN9.

#### CN2

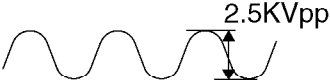
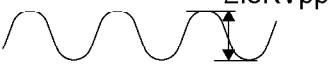
INV PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN2-1	HVAC1	LFB PCB CN181-1		
CN2-2	HVAC2	LFB PCB CN181-2		

### 3.19. LFB PC Board

#### CN181

Refer to INV PC Board CN2.

#### CN182

LFB PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN182-1	HVAC1	LFB PCB CN182-1		
CN182-2	HVAC2	LFB PCB CN182-2		



### **3.20. SNS PC Board CN41**

Refer to ADF PC Board CN28.

### 3.21. MJR PC Board

#### CN20

MJR PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN20-1	T1	Telephone Line		Line Signal
CN20-2	N.C.			Not Used
CN20-3	L2	Telephone Line		Line Signal
CN20-4	L1	Telephone Line		Line Signal
CN20-5	N.C.			Not Used
CN20-6	T2	Telephone Line		Line Signal

#### CN22

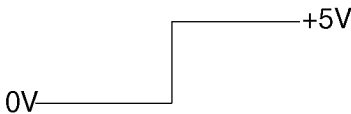


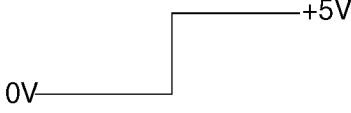


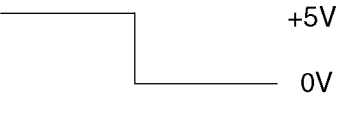

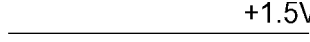
Refer to SC PC Board CN114.

#### CN25





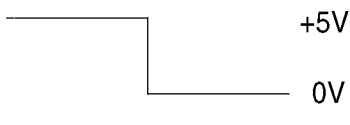


Refer to SC PC Board CN111.

### 3.22. CST4 PC Board

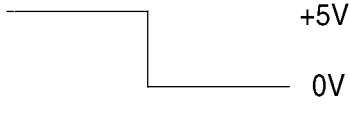


#### CN771

CST4 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN771-1	nPCHK2	Paper Detect Sensor-1		2nd Paper Tray Paper Detection Signal L: Detect
CN771-2	GND	Paper Detect Sensor-2		Ground
CN771-3	LDSP2	Paper Detect Sensor-3		Photo Sensor DC Drive Voltage
CN771-4	nUPLMT2	Upper Limit Sensor-1		2nd Paper Tray Paper Level Signal L: Detect
CN771-5	GND	Upper Limit Sensor-2		Ground
CN771-6	LDUPL2	Upper Limit Sensor-3		Photo Sensor DC Drive Voltage
CN771-7	nFDPCHK2	Paper Feed Sensor-1		2nd Paper Tray Paper Registration Detection Signal L: Detect
CN771-8	GND	Paper Feed Sensor-2		Ground
CN771-9	LDFPCHK2	Ppaper Feed Sensor-3		Photo Sensor DC Drive Voltage
CN771-10	N.C.			Not Used


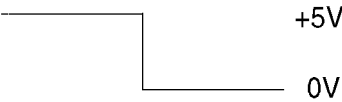


## CN772

CST4 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN772-1	+24VM	Feed Clutch-1		+24 VDC Power Supply
CN772-2	nADF2	Feed Clutch-4		2nd Paper Tray Feed Roller Drive Signal
CN772-3	+24VM	Medium Roller Clutch-1		+24 VDC Power Supply
CN772-4	nMRCLH2	Medium Roller Clutch-4		2nd Paper Tray Intermediate Roller Clutch Drive Signal
CN772-5	nJAMDOR2	Jam Door Sensor-1		2nd Paper Tray Jam Access Cover Open Detection Signal L: Detect
CN772-6	GND	Jam Door Sensor-2		Ground
CN772-7	LDJAM2	Jam Door Sensor-3		Photo Sensor DC Drive Voltage


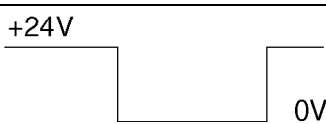
## CN773

CST4 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN773-1	nCST2	Paper Tray Sensor-1		2nd Paper Tray Detection Signal L: Detect
CN773-2	GND	Paper Tray Sensor-2		Ground
CN773-3	LDCST2	Paper Tray Sensor-3		Photo Sensor DC Drive Voltage

### CN774

CST4 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN774-1	n3MRDY	DC Motor		DC Motor Ready Signal
CN774-2	n3MON	DC Motor		DC Motor Ready Signal
CN774-3	+24VM	DC Motor		+24 VDC Power Supply
CN774-4	MGND	DC Motor		Ground
CN774-5	H/L	DC Motor		Not Used

### CN775

CST4 PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN775-1	+24VM	Lift Motor		+24 VDC Power Supply
CN775-2	nLIFTM2	Lift Motor		2nd Paper Tray Lift Motor Drive Signal

### CN776

Refer to LPC3 PC Board CN731.

### CN777

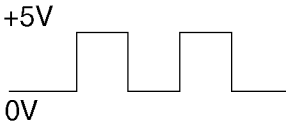

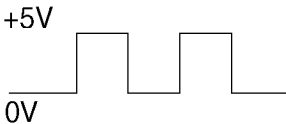
Refer to LPC3 PC Board CN731.

### 3.23. LANB PC Board

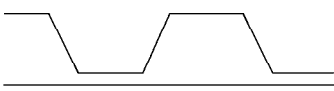
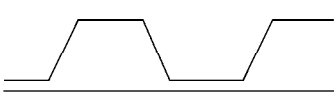
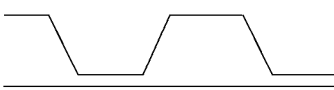
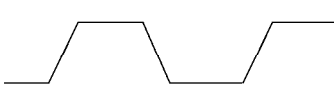
#### CN2

Refer to SC PC Board CN123.

#### CN5

LANB PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN5-1	LINK	LANC PCB CN200-1		LANB PCB/ LANC PCB Link Signal
CN5-2	+5V	LANC PCB CN200-3		+5 VDC Power Supply
CN5-3	RXD	LANC PCB CN200-2		Reception Data Signal

#### CN6

LANB PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN6-1	RDM	LANC PCB CN200-5		Reception Data "-" Signal
CN6-2	RDP	LANC PCB CN200-6		Reception Data "+" Signal
CN6-3	TDM	LANC PCB CN200-7		Transmission Data "-" Signal
CN6-4	TDP	LANC PCB CN200-8		Transmission Data "+" Signal

### **3.24. LANC PC Board**

#### **CN200**

Refer to LANB PC Board CN5 and CN6.

### **3.25. EP PC Board CN1**

Refer to SC PC Board CN121.

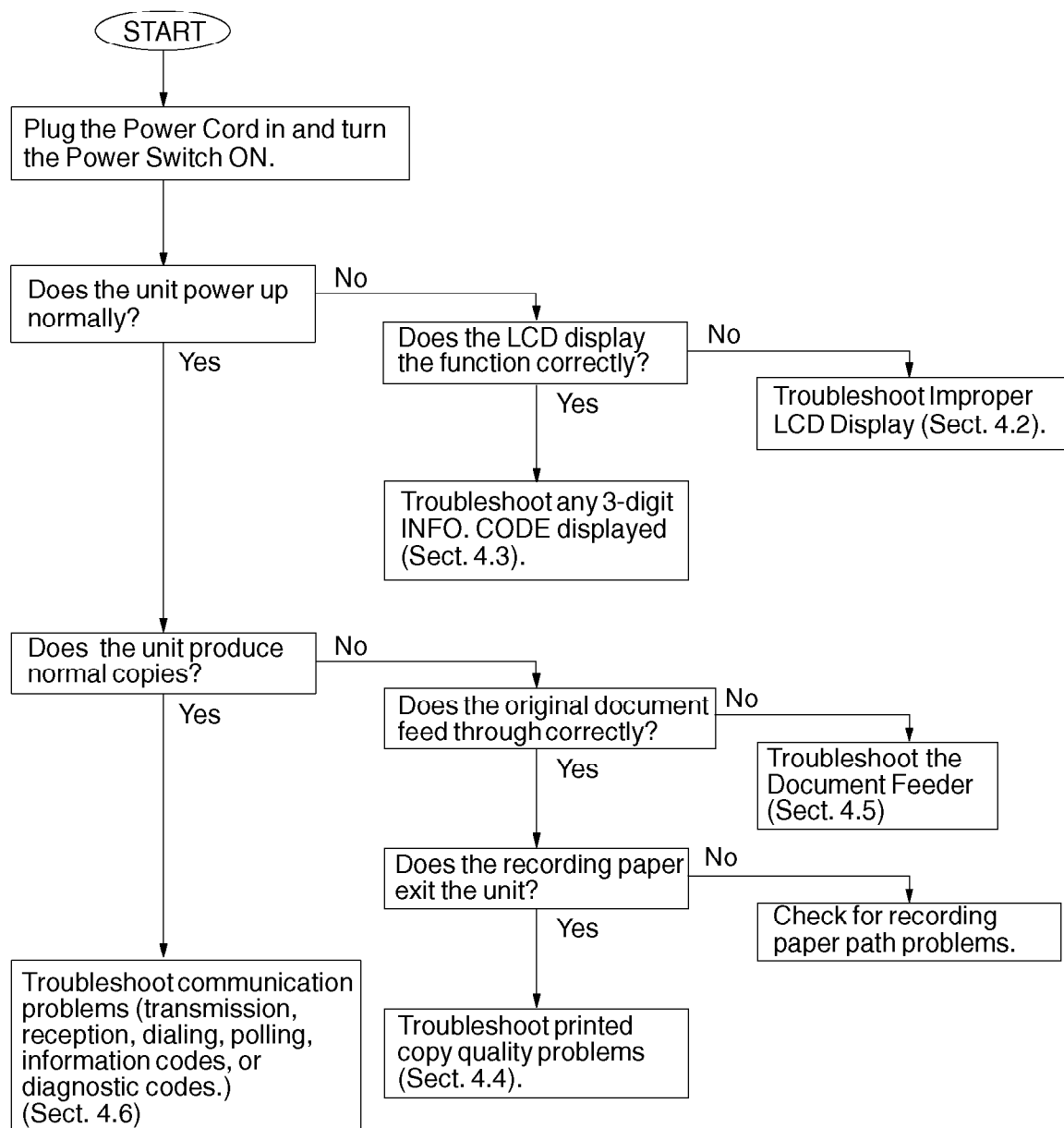


### 3.26. SRU PC Board (Optional) CN91

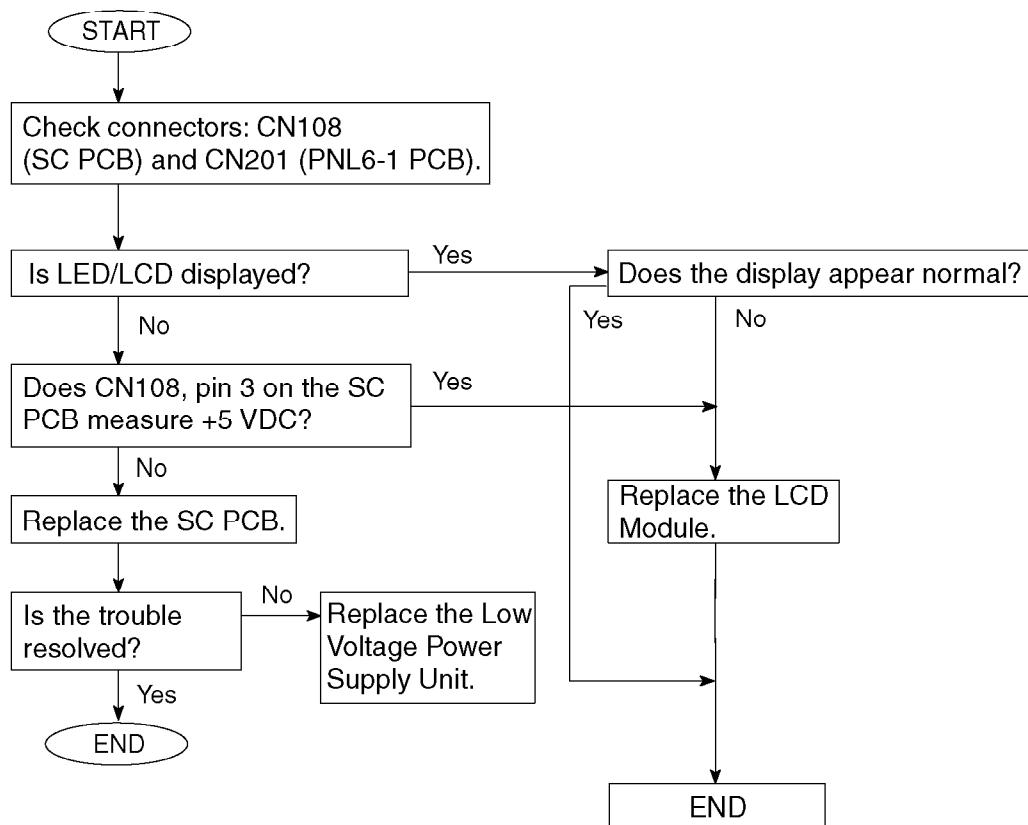
SRU PCB Pin No.	Signal Name	Destination	Signal Waveform	Function
CN91-1	MIC (+)	Telephone Handset CN		Handset Microphone
CN91-2	RCV (+)	Telephone Handset CN		Handset Receiver
CN91-3	RCV (-)	Telephone Handset CN		Handset Receiver
CN91-4	MIC (-)	Telephone Handset CN		Handset Microphone

## 4 Troubleshooting

### 4.1. Initial Troubleshooting Flowchart

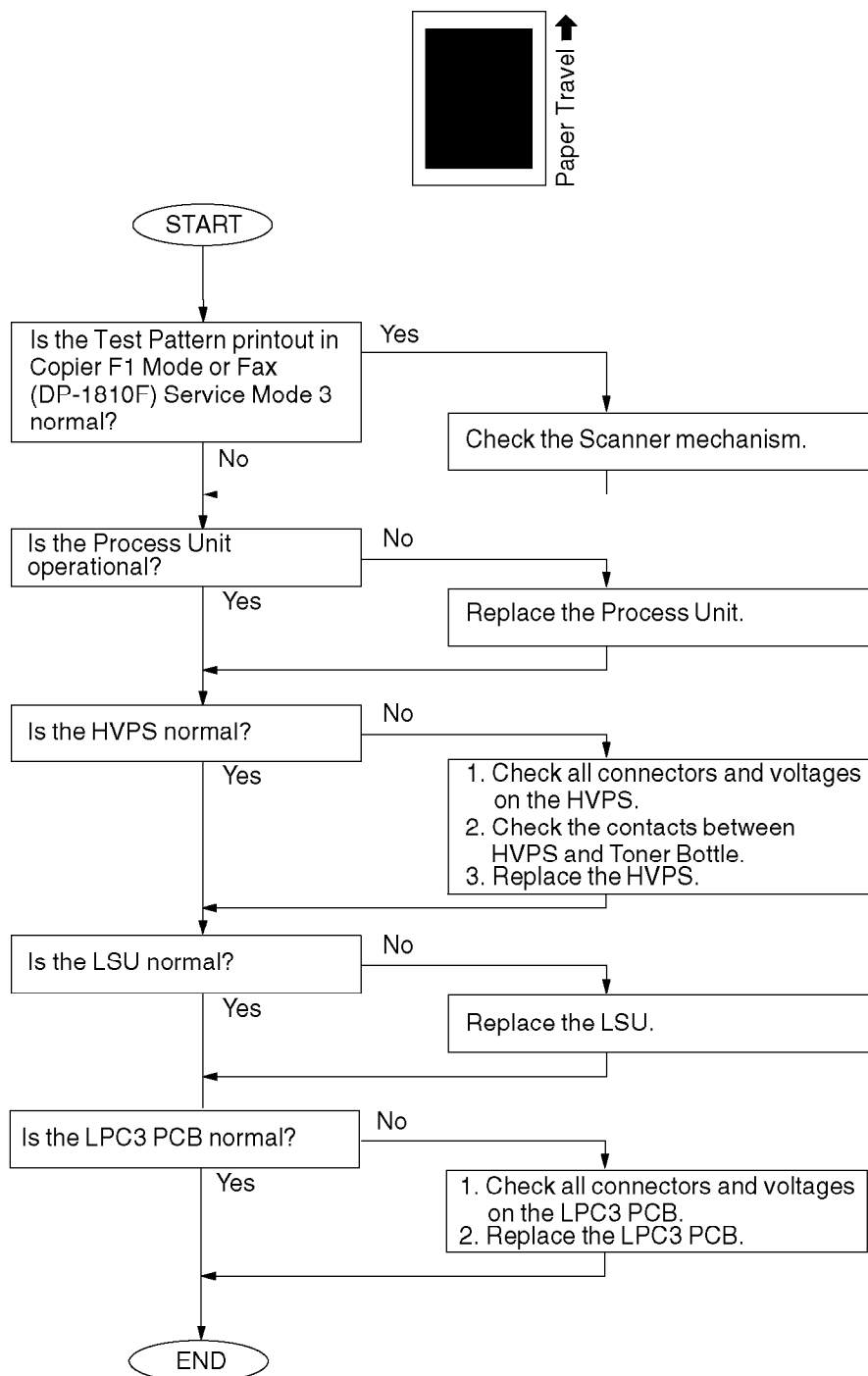


## 4.2. Improper LCD Display

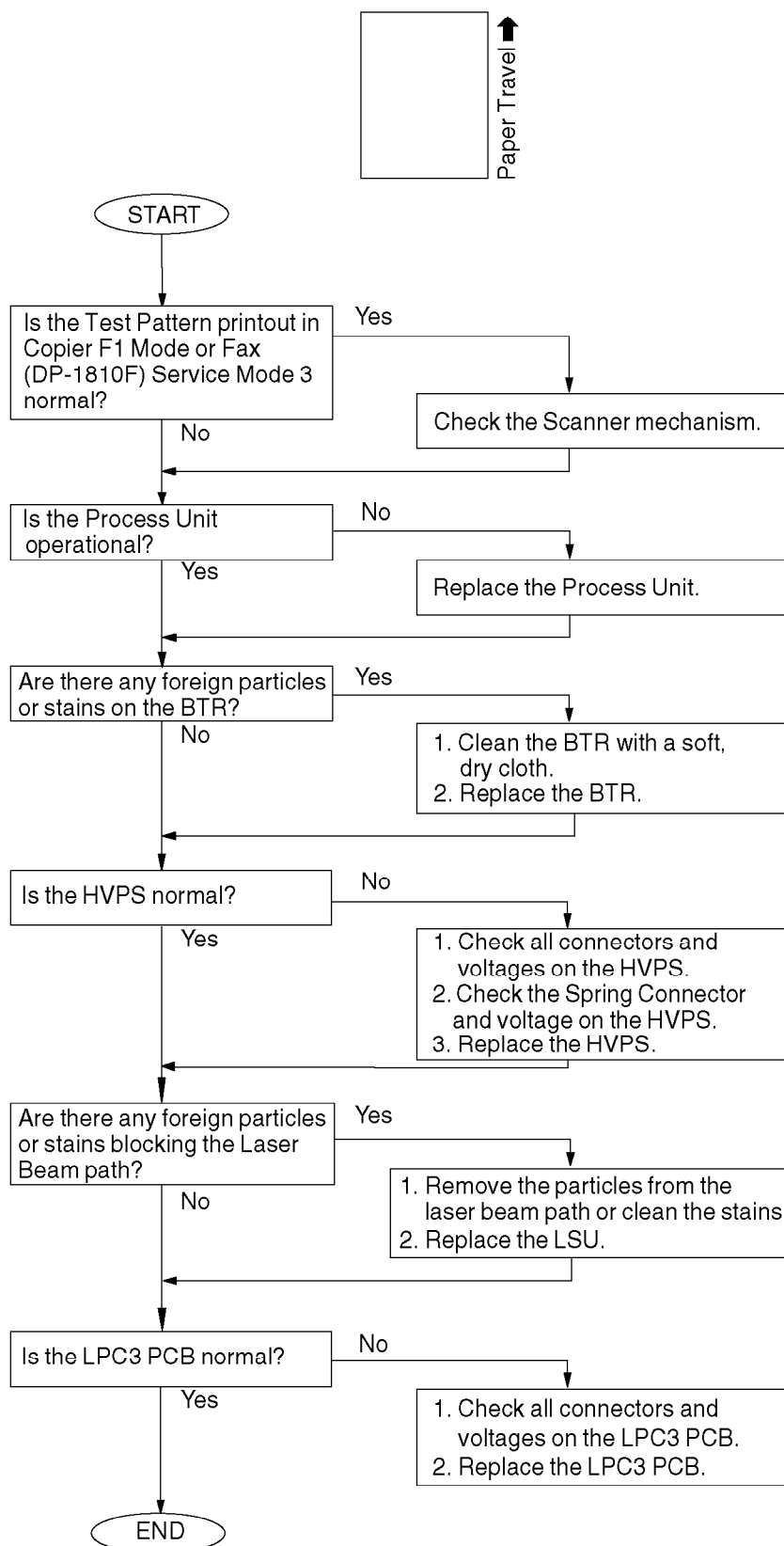


## 4.3. Printed Copy Quality Problems

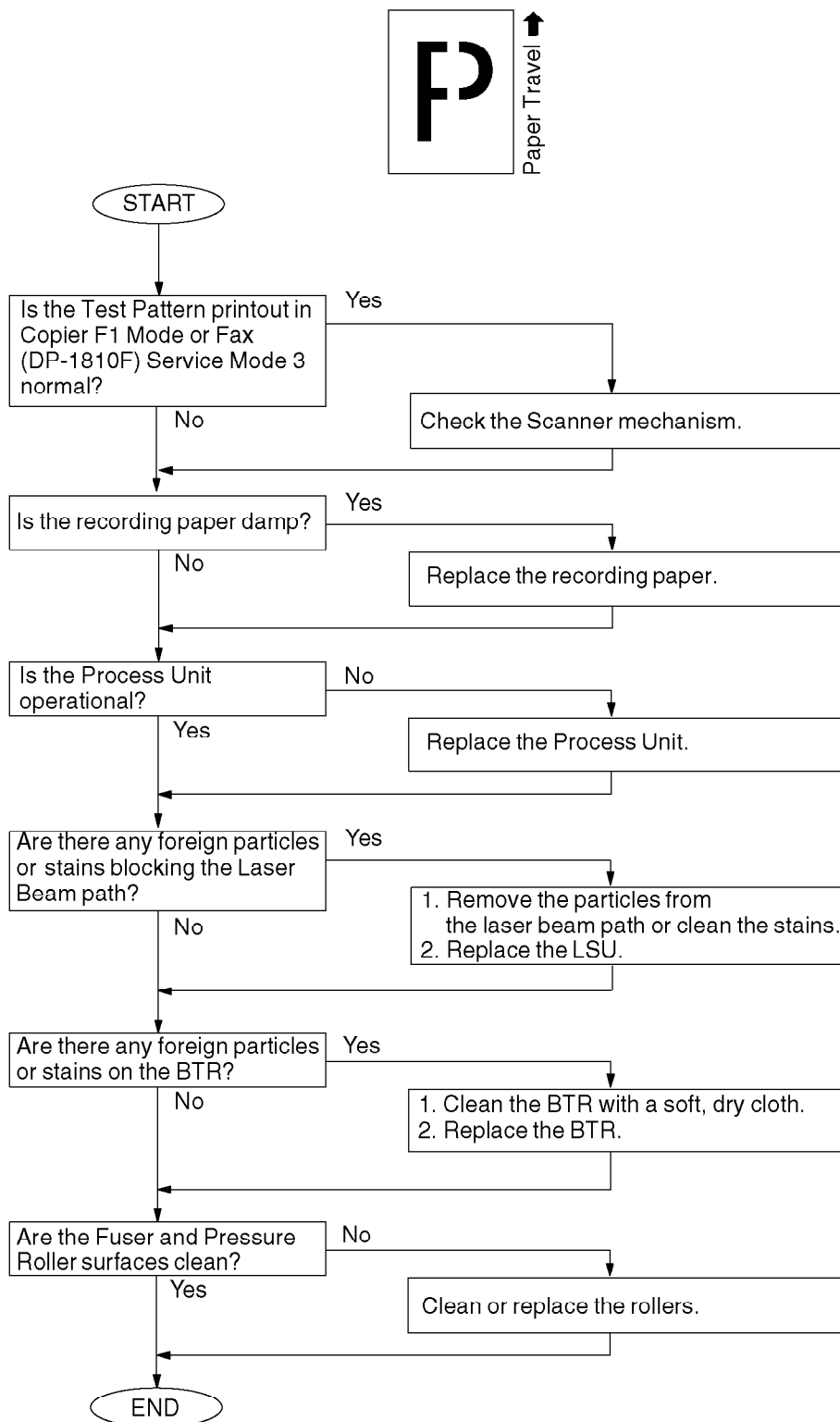
### 4.3.1. Black Copy



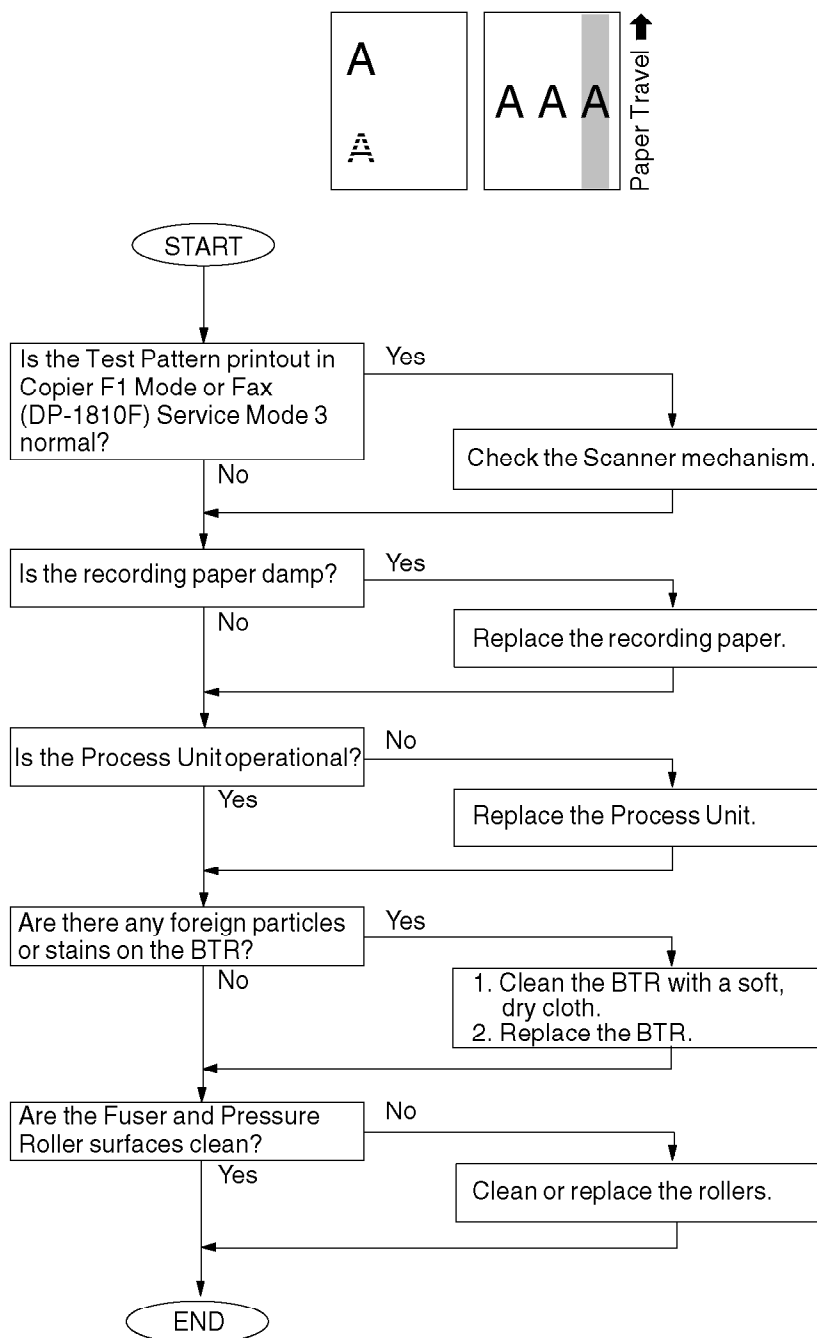
### 4.3.2. Blank Copy



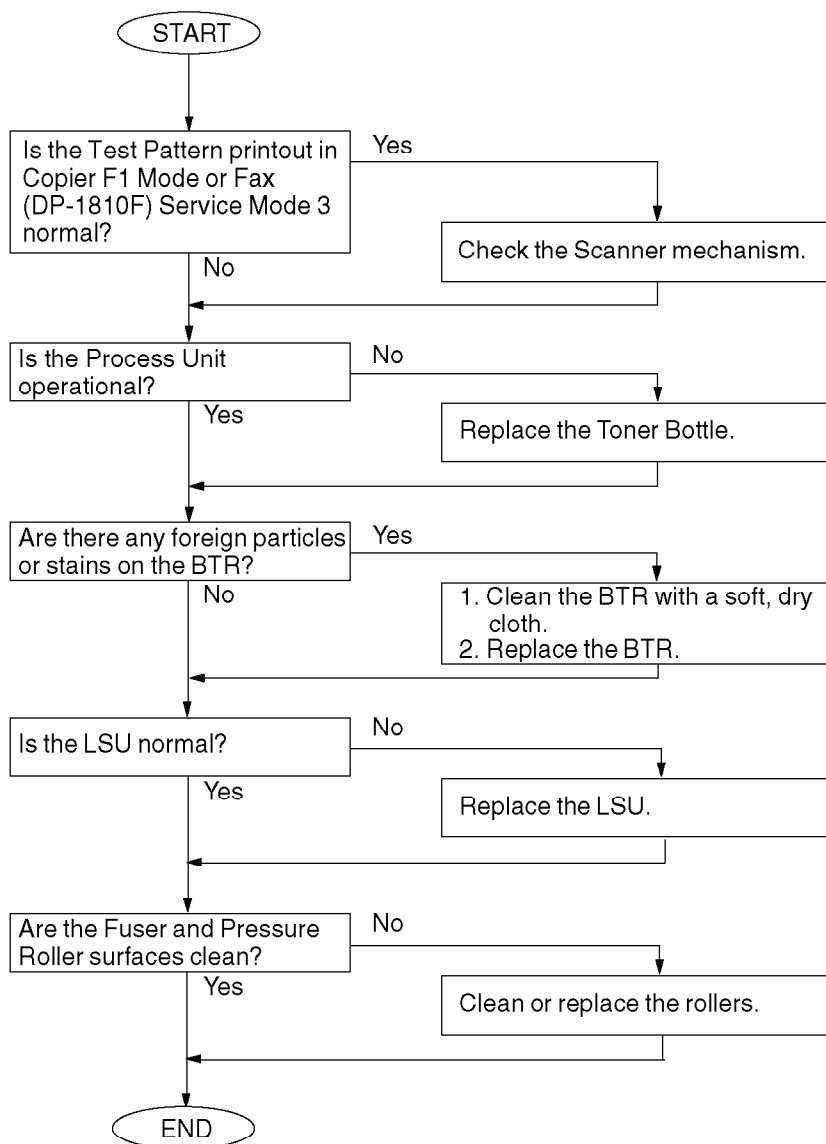
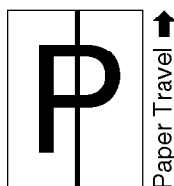
### 4.3.3. Vertical White Lines



#### 4.3.4. Ghost Images

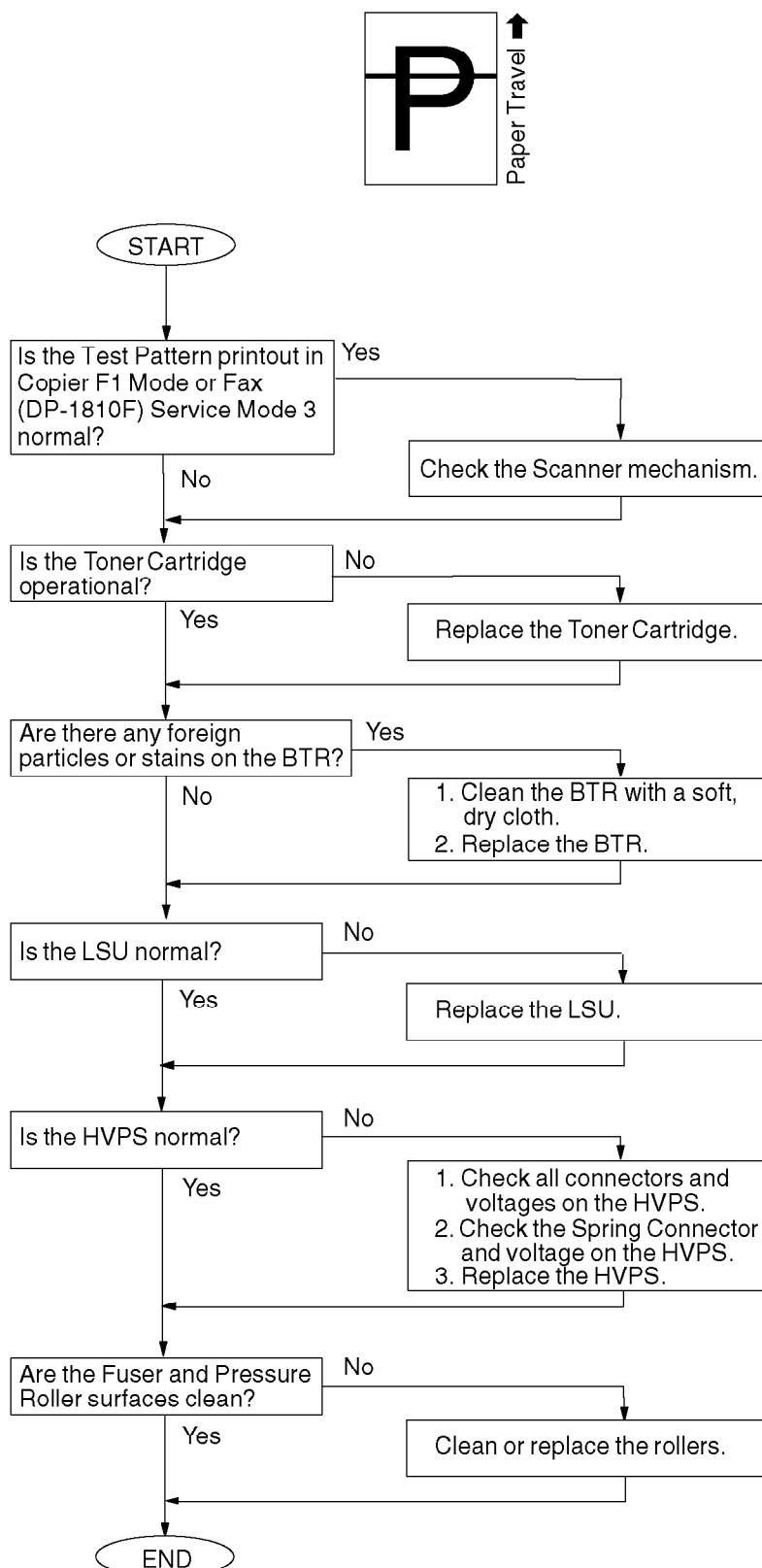


### 4.3.5. Vertical Dark Lines

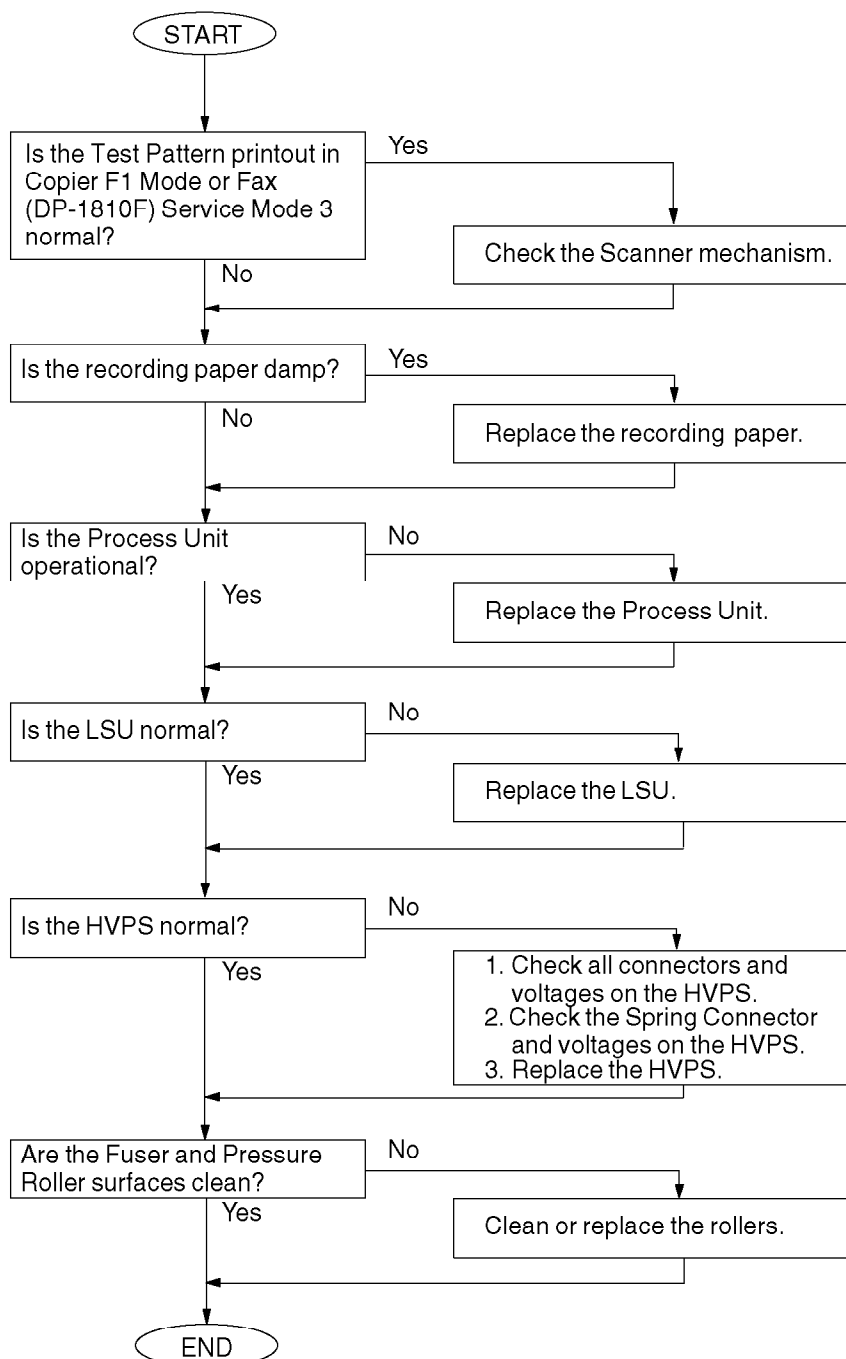
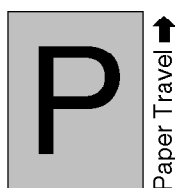




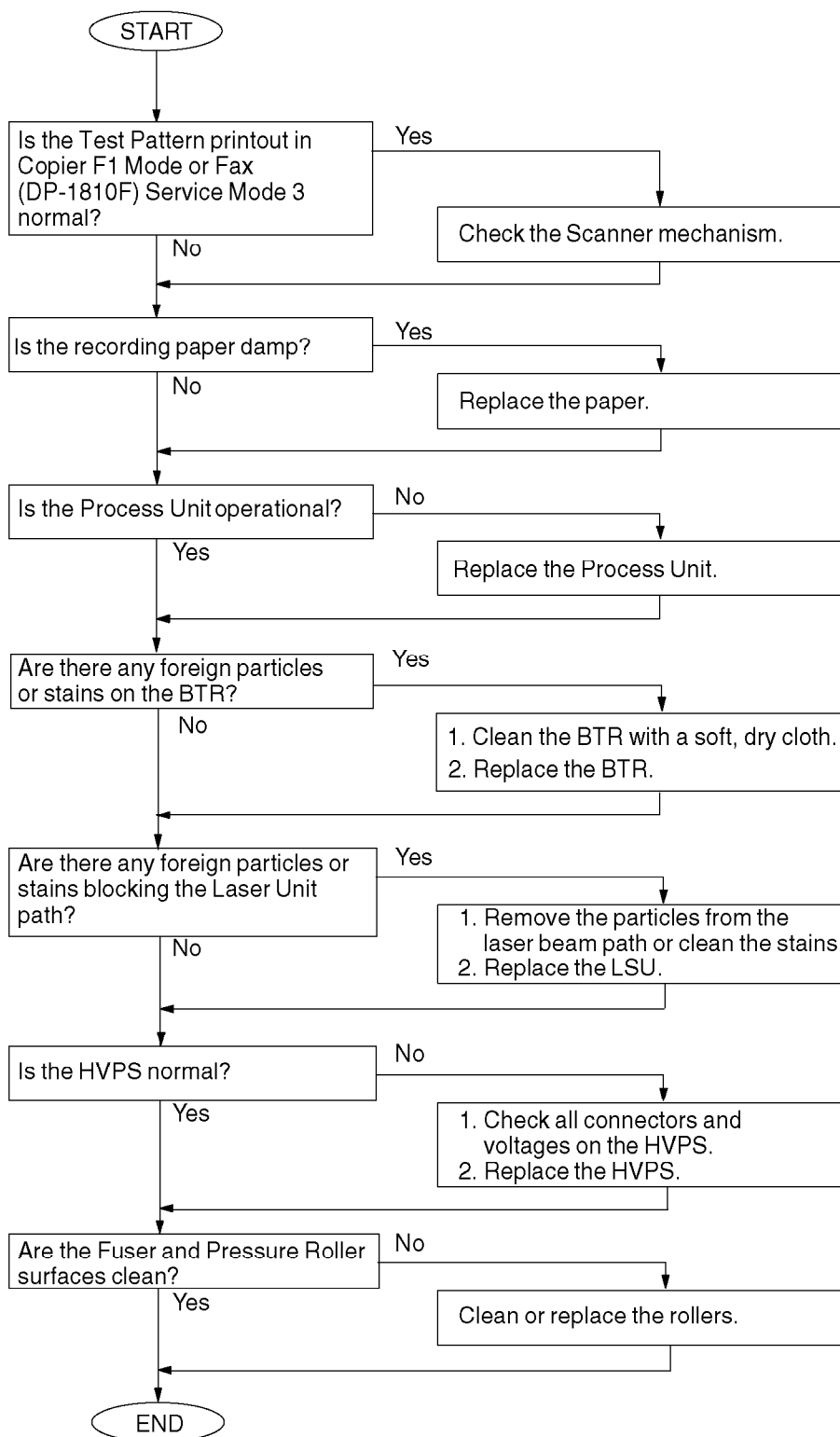
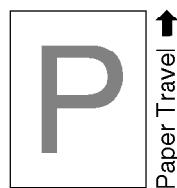
#### 4.3.6. Horizontal Dark Lines



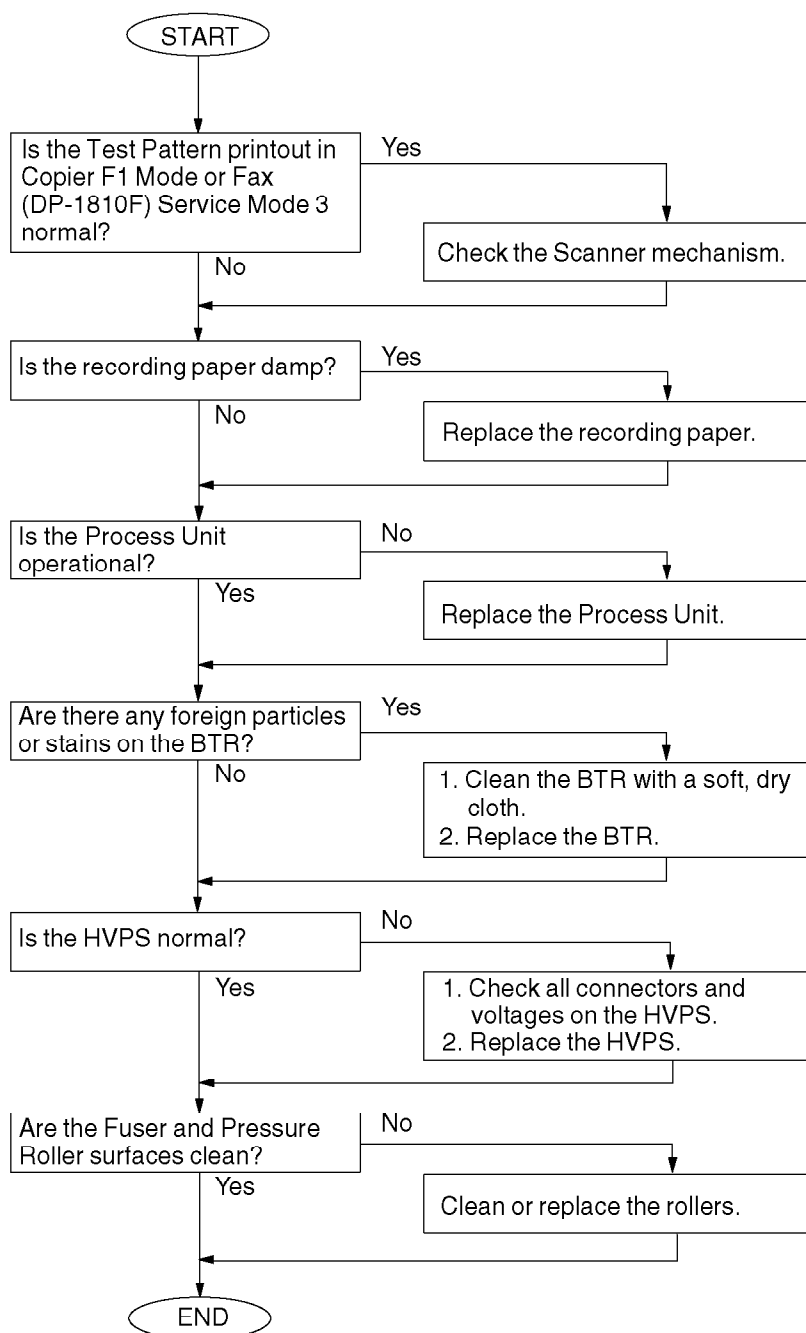
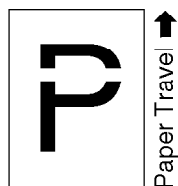
### 4.3.7. Dark Background



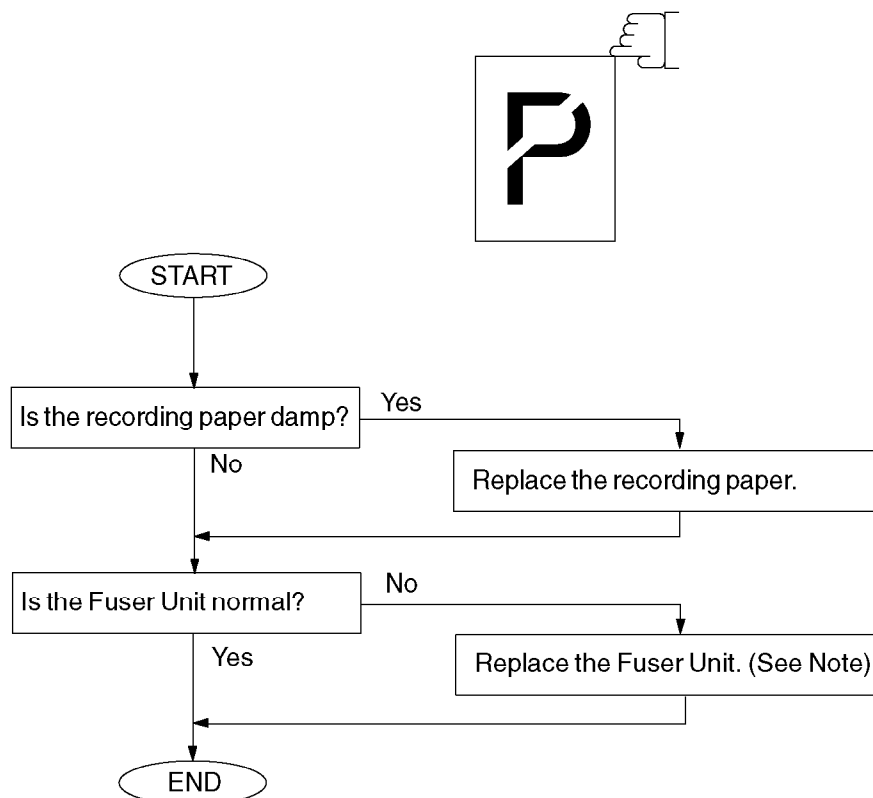
#### 4.3.8. Light Print



### 4.3.9. Horizontal White Lines



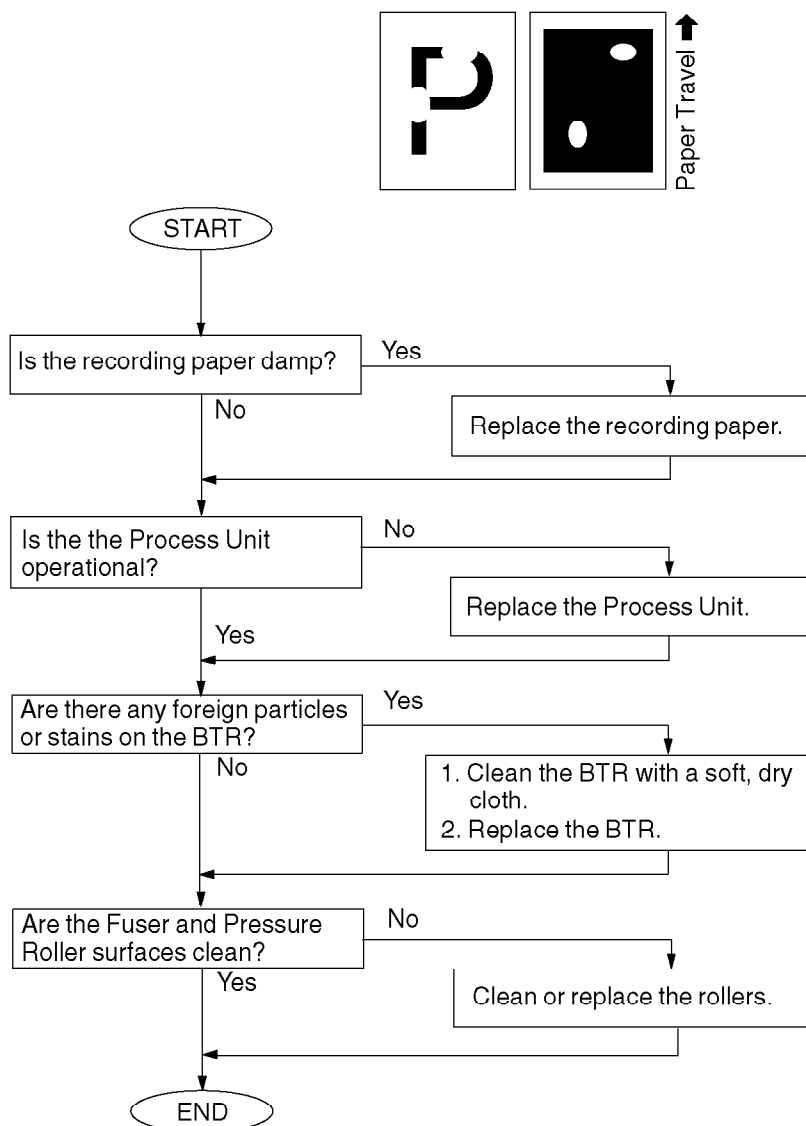
#### 4.3.10. Improper Fusing (Printed image does not bond to the paper)



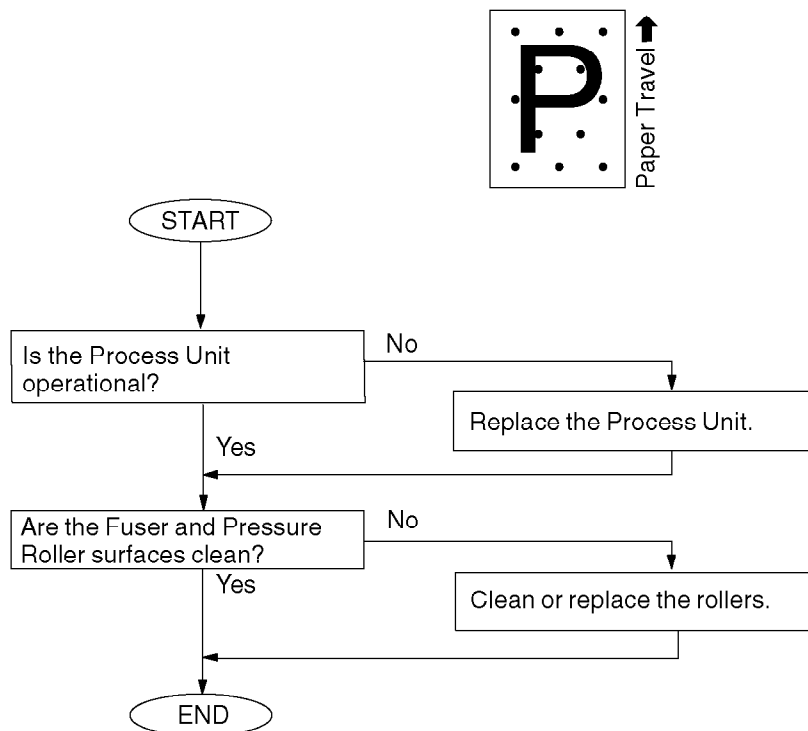
**Note:**

Replace the entire Fuser Unit when the Thermostat, the Thermal Fuse or the Thermistor Assembly becomes an open-circuit.

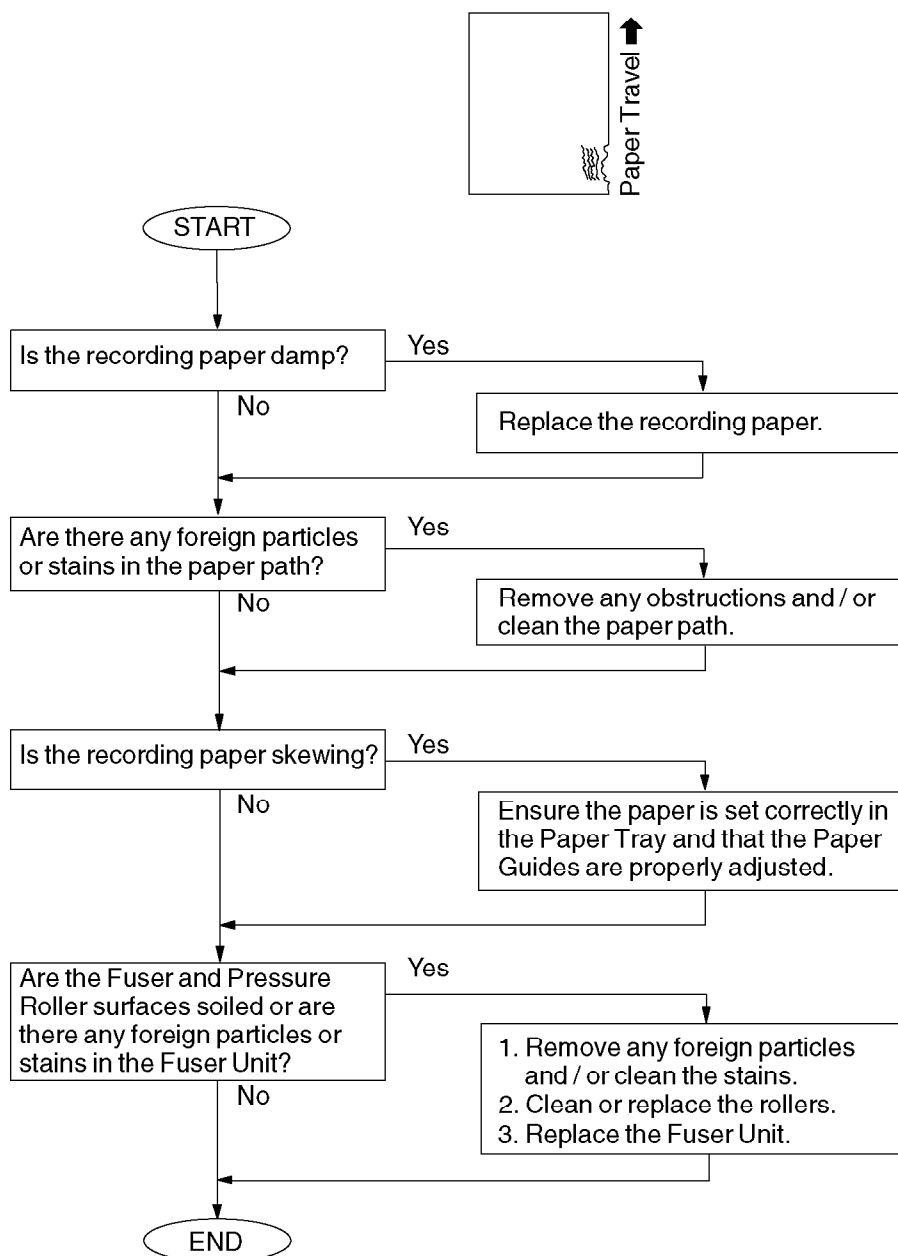
#### 4.3.11. Voids in Solid Areas



#### 4.3.12. Black Dots

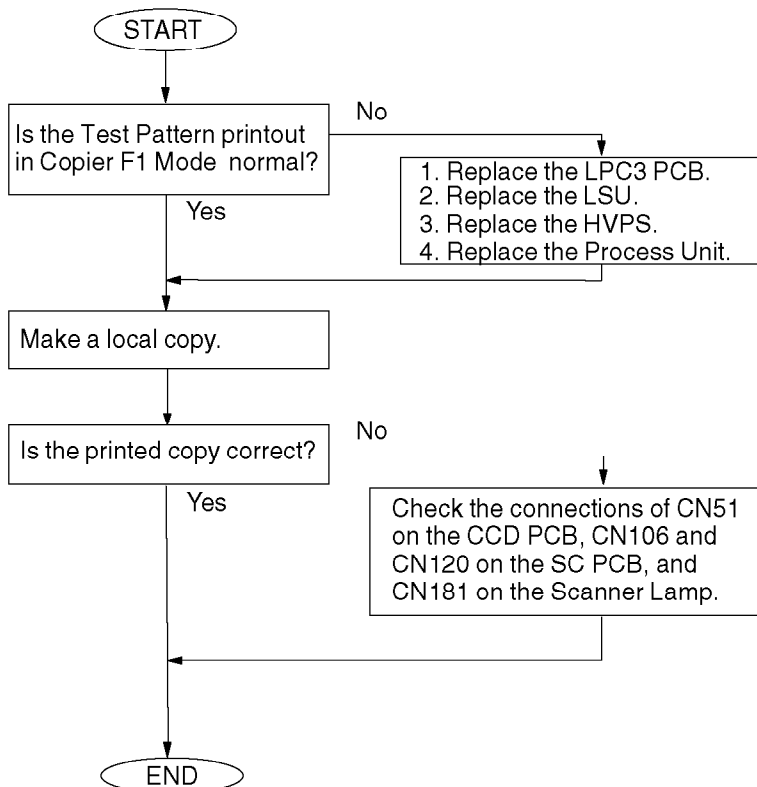


### 4.3.13. Recording Paper Creases

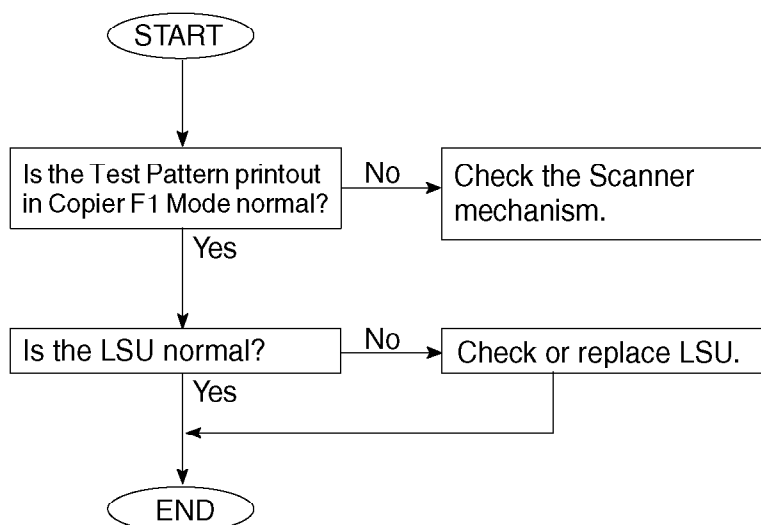
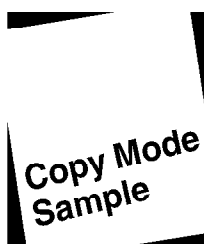




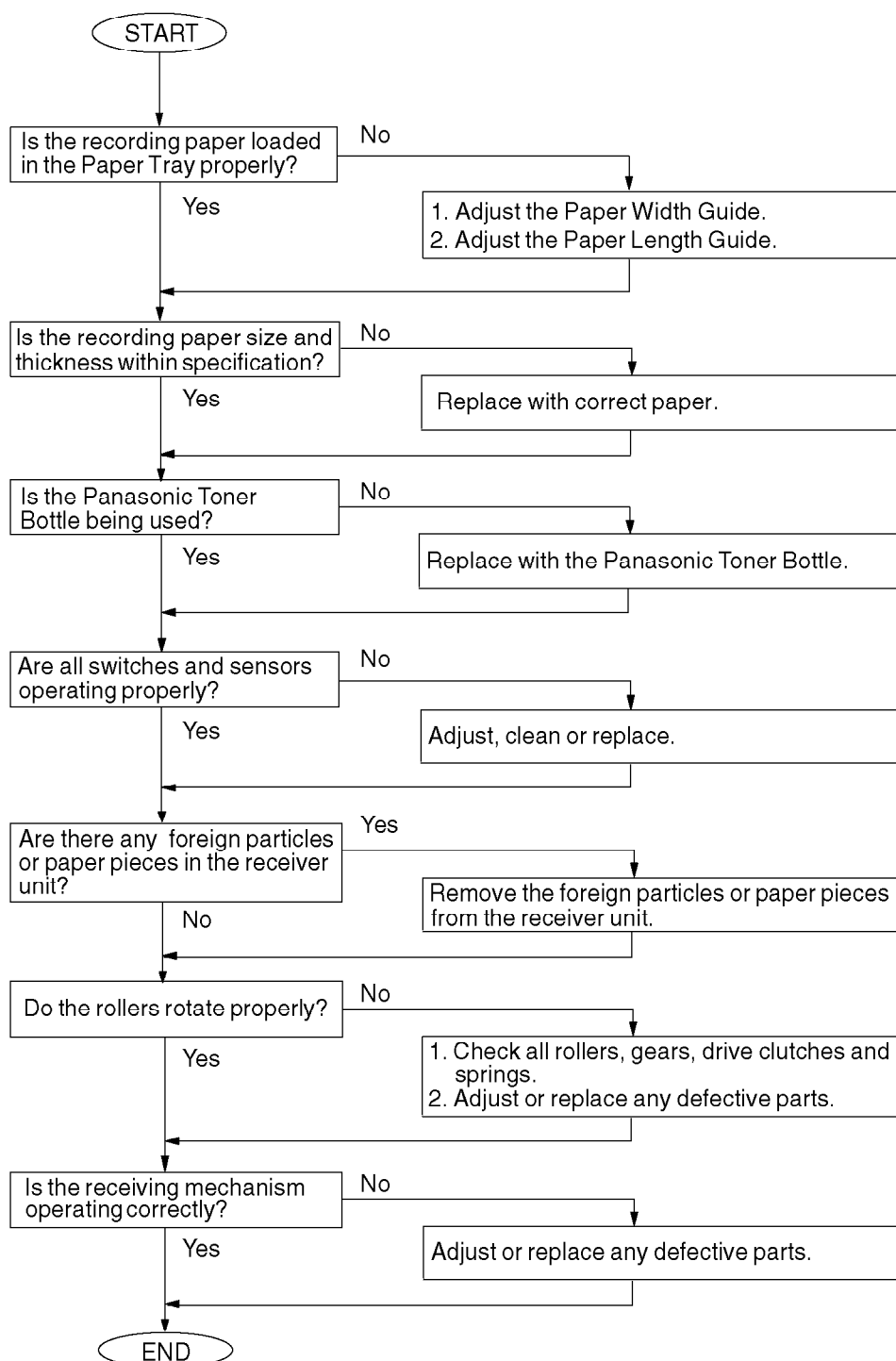
#### 4.3.14. Poor Printed Copy Quality



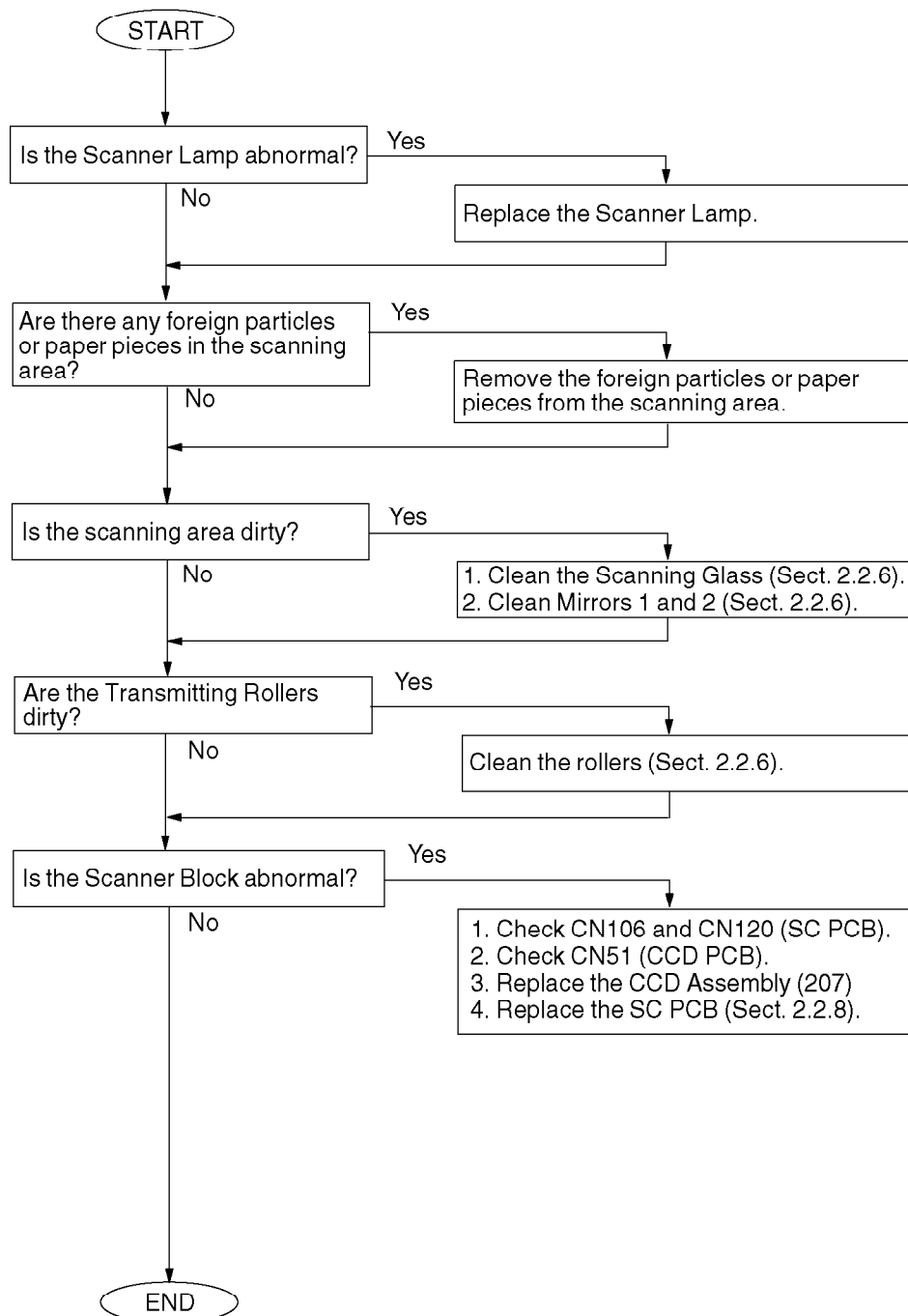
#### 4.3.15. Document Skewing



#### 4.3.16. Abnormal Printing

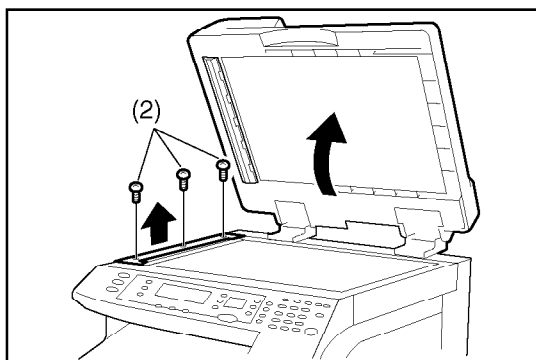


### 4.3.17. Scanned Copy Quality Problems

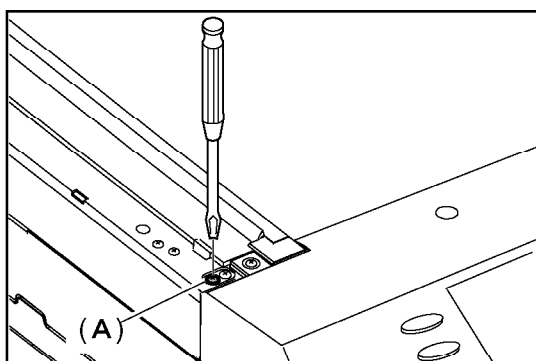


#### 4.3.18. Print Skew Adjustment for Platen Glass Scanning

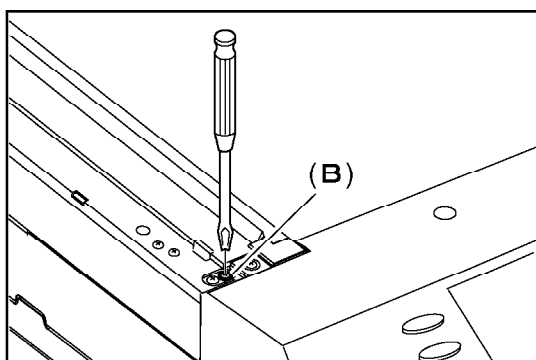
Follow the procedures below to adjust for the skewing when scanning original(s) from the Platen Glass.



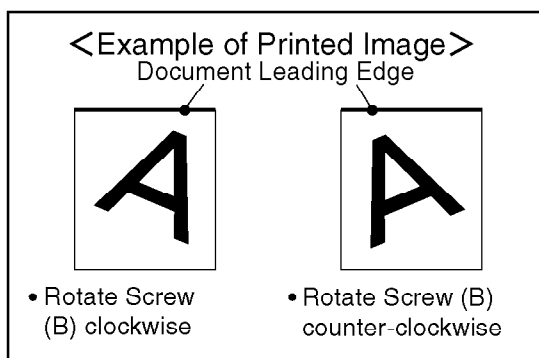
- (1) Make sure that the Scanner Unit is in the Standby Mode.
- (2) 3 Screws and remove the Left Platen Cover.



- (3) Loosen the Left Screw (A).



- (4) Adjust the Right Screw (B) to correct for the skew of the leading edge of the document.



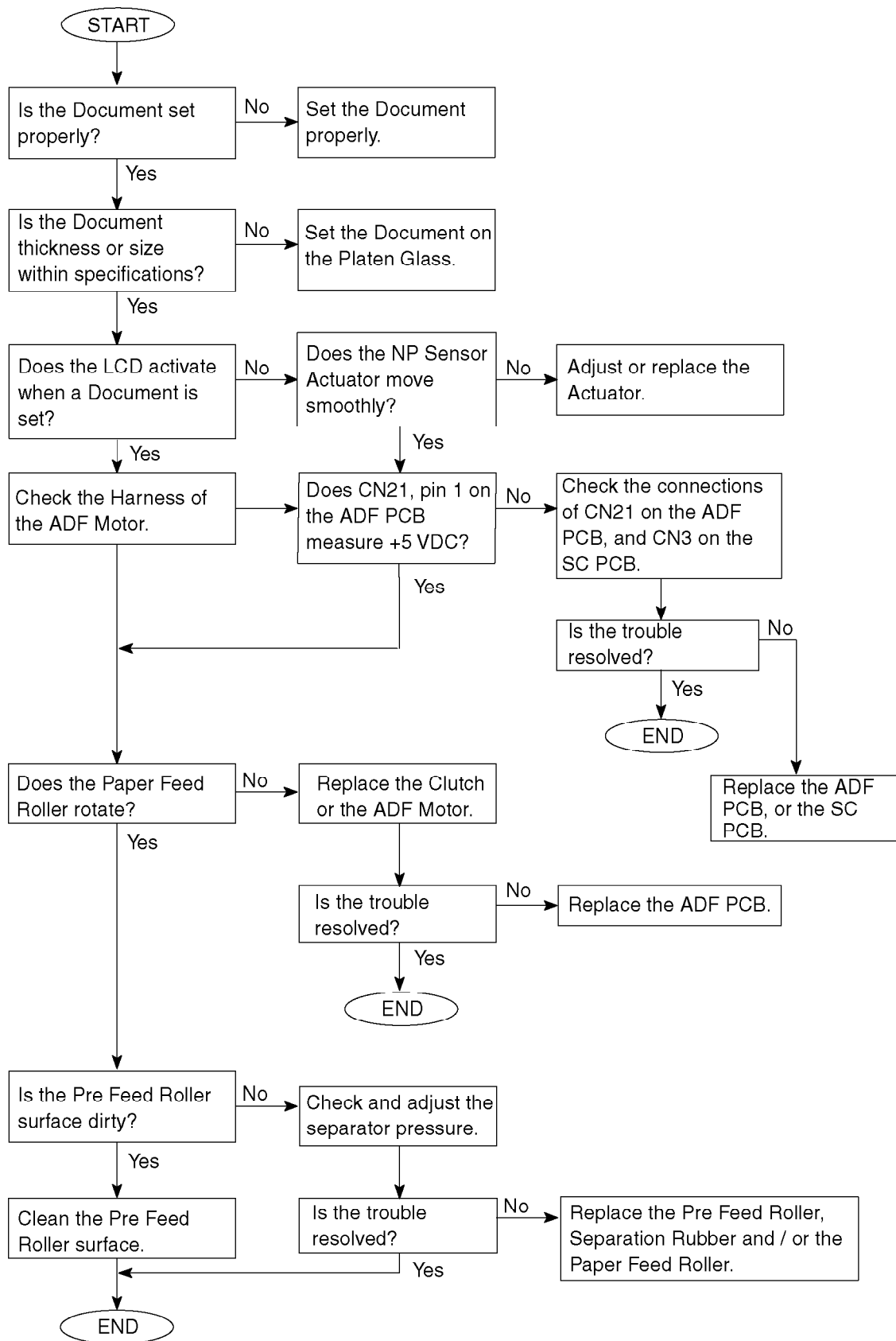
#### <Direction of Rotation and Skew Adjustment Amount>

- Clockwise → When the printed image is skewed to the right side.
- Counter-clockwise → When the printed image is skewed to the left side.
- Rotation and amount of movement → One rotation of the screw, adjusts the skewed image by approximately 1 mm.

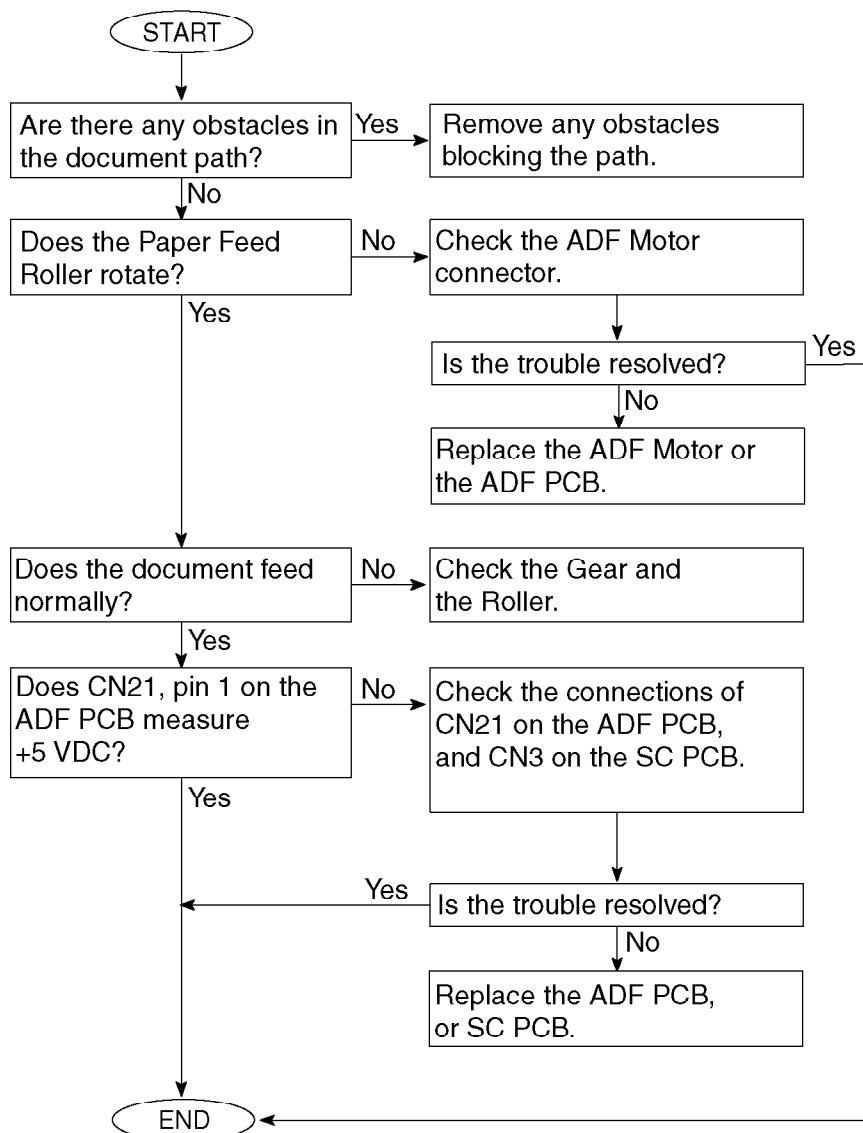
- (5) Make a copy to confirm the correction.
- (6) Perform the Service Mode F6 (No.2) to adjust the Top field, if necessary.
- (7) Tighten Screw (A) and re-install the Left Platen Cover.

## 4.4. Document Feeder (ADF)

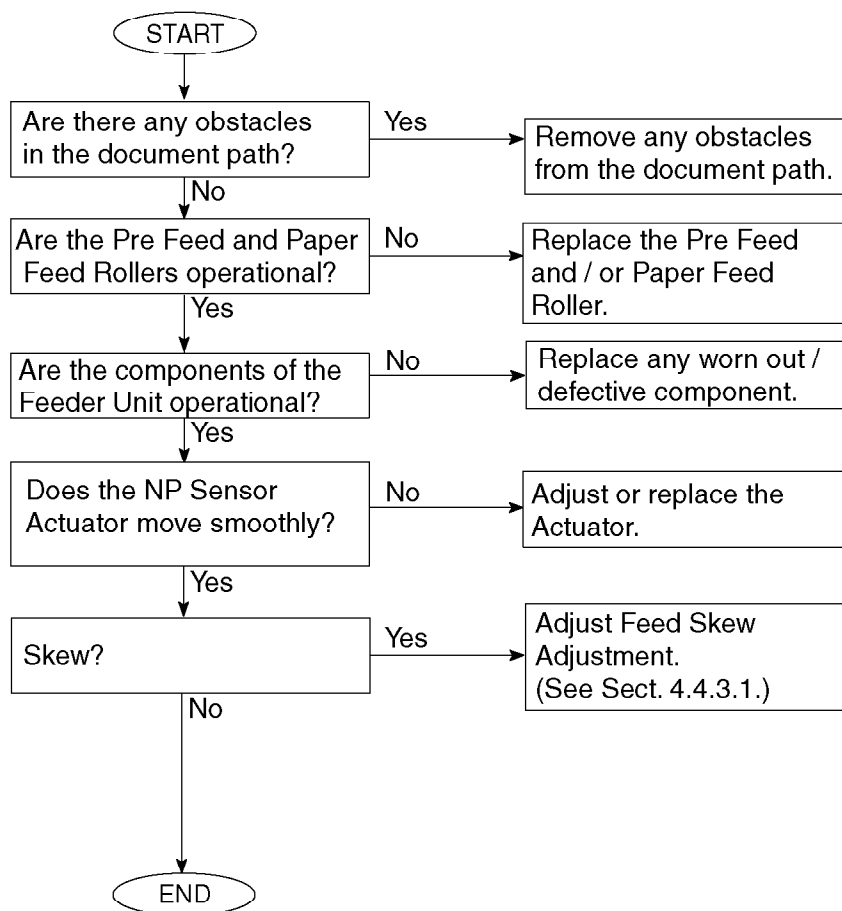
### 4.4.1. No Document Feed



#### 4.4.2. Document Jam

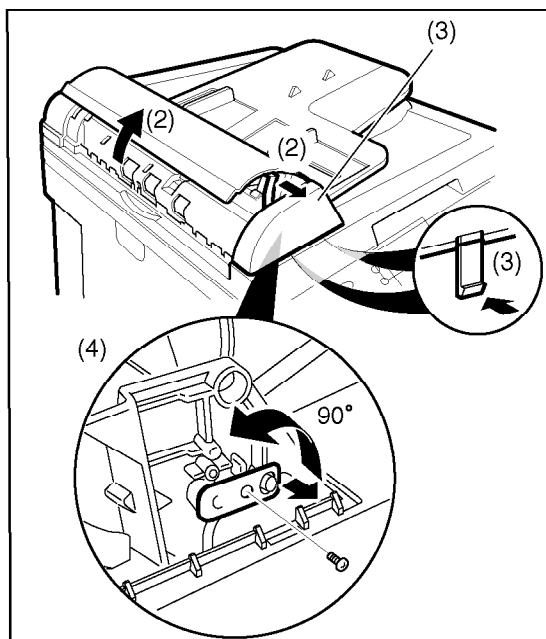


#### 4.4.3. Document Skew



#### 4.4.3.1. ADF Feed Skew Adjustment

Using a lined Original (about 20 lb (75 g/m<sup>2</sup>) weight paper), make a copy from the ADF to check for feeding alignment.

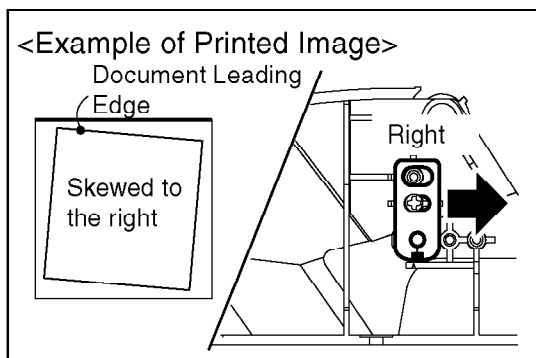


- (1) Copy an Original using the ADF.
- (2) Open the ADF Cover and release the Stopper.
- (3) Remove the ADF Front Cover.

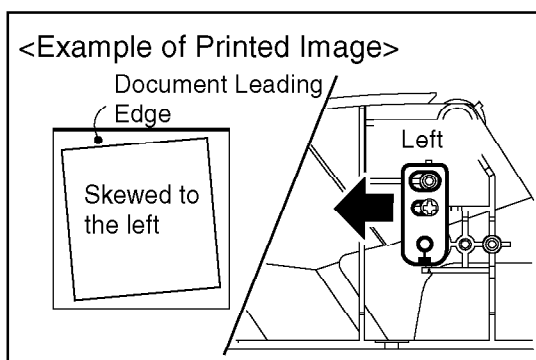
**Note:**

Release the 2 Latch Hooks from back by opening the ADF.

- (4) Remove 1 Screw and turn the Adjusting Bracket counter-clockwise.



- (A) If the Document is Skewed to the right, set the Adjusting Bracket to the right and secure with 1 Screw.

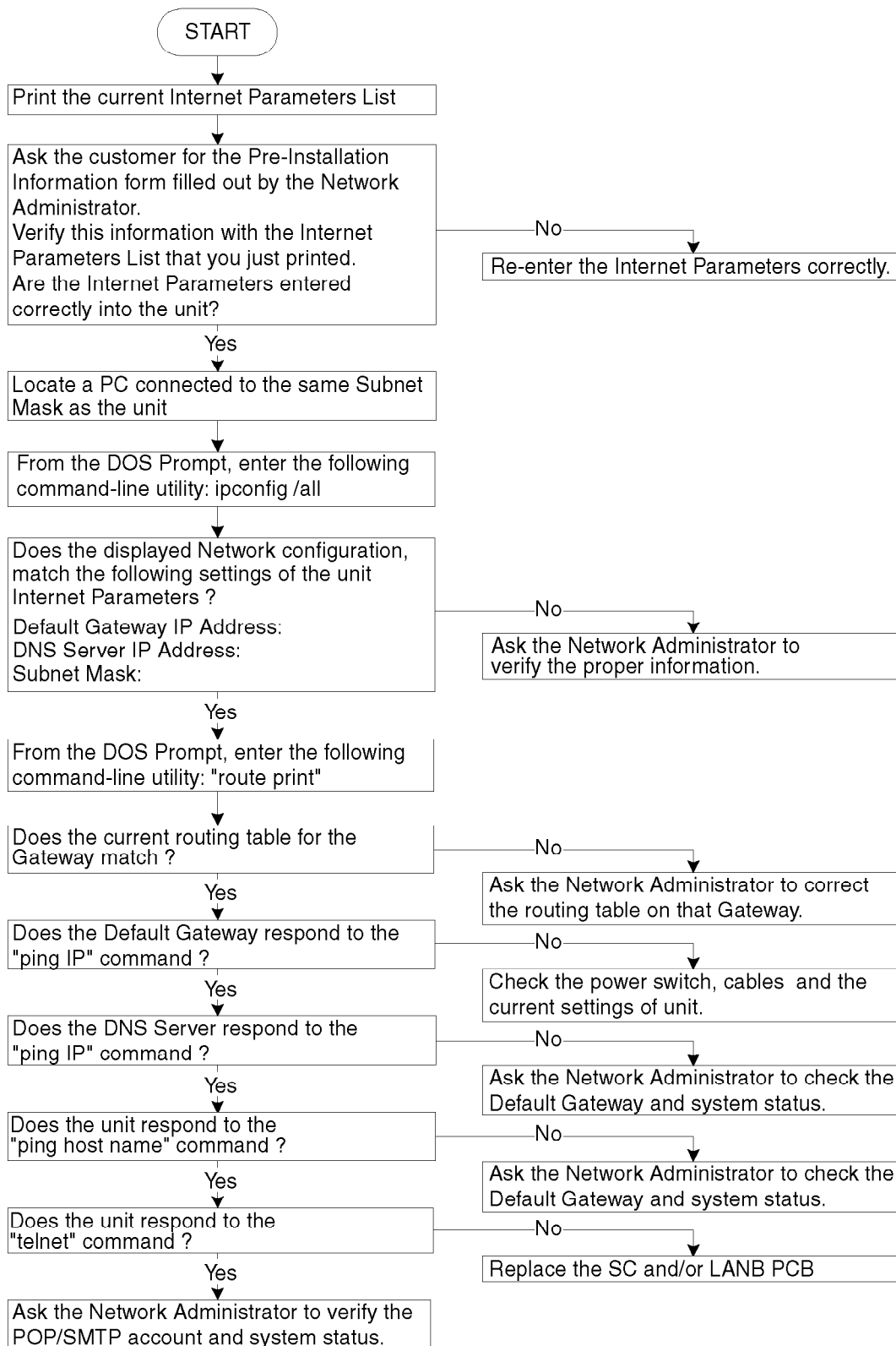


- (B) If the Document is Skewed to the left, set the Adjusting Bracket to the left and secure with 1 Screw.



## 4.5. Troubleshooting the LAN Interface

### 4.5.1. Checking Network Configuration



## 4.5.2. Testing the TCP/IP Network

It is beyond the scope of this Service Manual to cover Networking in detail, there are many excellent manuals on this subject, but we hope the information in this section will aid with your troubleshooting efforts. In most cases, the Network Administrator will be able to provide you with needed information or assistance.

When encountering Network problems during an onsite service call or during the installation stage, try to isolate the steps that are not being completed so that you can quickly locate the components that don't work. It is best to organize your troubleshooting efforts by understanding what should be happening, then you can trace the path and see where the problem is occurring.

In our case, we use TCP/IP for transportation of data from one system to another, which involves a whole series of events occurring throughout a number of different layers.

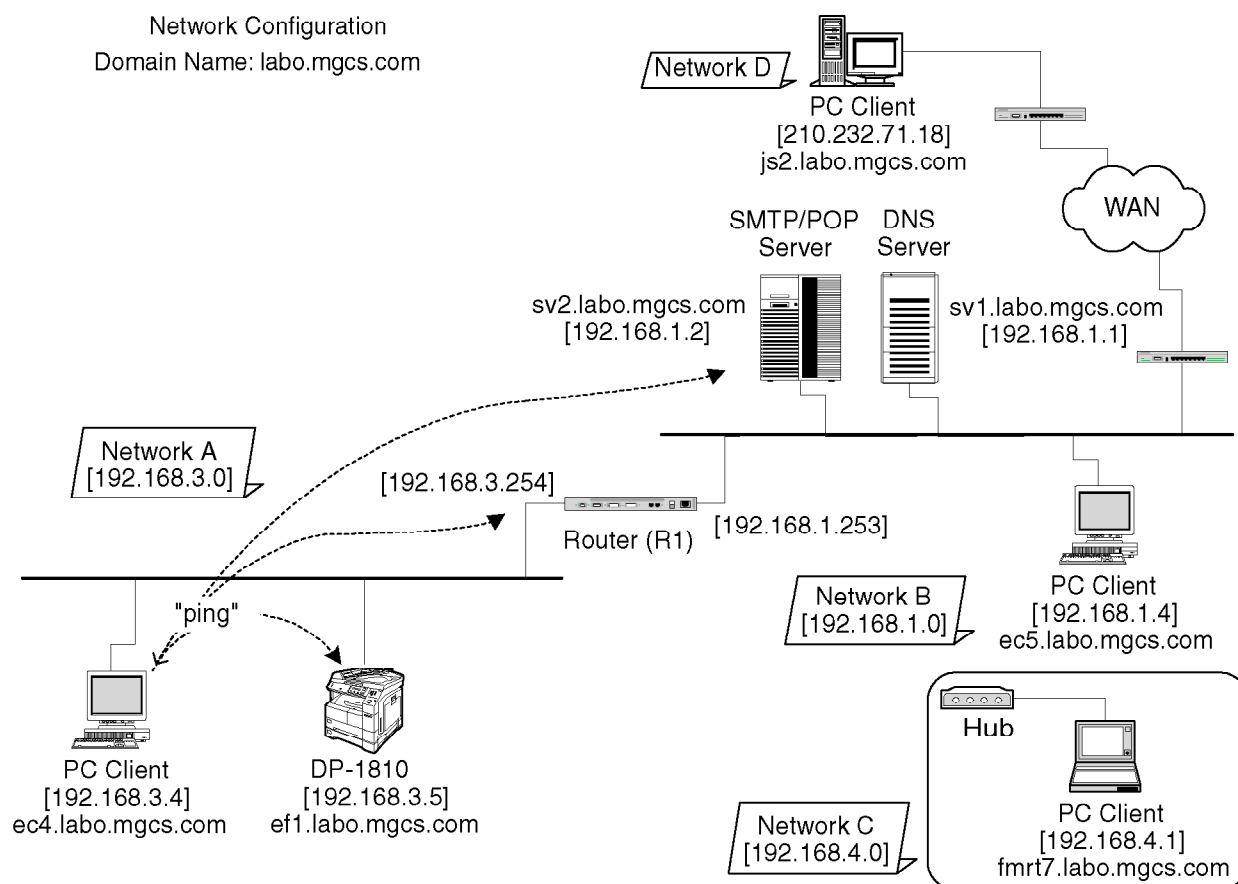
As with all networking, TCP/IP works better when its plugged in, therefore, start your troubleshooting by checking the Physical Connectivity first, the cable(s).

In our examples, we'll use several simple tools readily available in the DOS command-line utility for troubleshooting. There are many other utilities available for checking more detailed information, some are Free of charge, others are available for a nominal fee.

### 1. System Diagram Model

Ask the customer to provide you with the Pre-Installation Information form, that was filled out by the Network Administrator.

A description or system diagram for the unit, including its physical address, email server and DNS server is required.



## 2. Checking Current Configuration

Print the current unit Internet Parameters configuration.

Locate a PC connected to the same Subnet Mask as the unit, then from the DOS Prompt, type the following command-line utility: **"ipconfig /all"** for Windows 98/Me/XP/2000/NT.

Verify that the displayed Network configuration on the PC, matches the following Internet Parameter settings of the unit:

Default Router IP Address: (PC: Default Gateway Address:)

DNS Server IP Address:

Subnet Mask: (whether it is valid)

### For Windows 98 / Me / XP / 2000 / NT

The following example shows the output after you type "ipconfig /all" at a command prompt:

```
C:\>ipconfig /all
Windows NT IP Configuration

    Host Name . . . . . : ec4.labo.mgcs.com
    DNS Servers . . . . . : 192.168.1.1
    Node Type . . . . . : Hybrid
    NetBIOS Scope ID . . . . . :
    IP Routing Enabled. . . . . : No
    WINS Proxy Enabled . . . . . : No
    NetBIOS Resolution Uses DNS . . . . . : No

    Ethernet adapter IBMFE1 . . . . . :
    Description . . . . . : IBM 100/10 EtherJet PCI Adapter

    Physical Address . . . . . : 00-04-AC-EE-9C-E8
    DHCP Enabled . . . . . : No
    IP Address . . . . . : 192.168.3.4
    Subnet Mask . . . . . : 255.255.255.0
    Default Gateway . . . . . : 192.168.3.254
    Primary WINS Server . . . . . : 192.168.3.18
```

From the above examples, you know the Network configuration for the specified Subnet Mask is as follows: IP Address: 192.168.3.4; Subnet Mask: 255.255.255.0; Default Gateway (Default Router IP Address): 192.168.3.254; DNS Server: 192.168.1.1 and the Domain Name: labo.mgcs.com (obtained from the Host Name).

## 3. Using "PING" to Test Physical Connectivity

The Packet Internet Groper (PING) is a command-line tool included with every Microsoft TCP/IP client (any DOS or Windows client with the TCP/IP protocol installed). PING is a simple utility that is used to send a test packet to a specified IP Address or Hostname, then, if everything is working properly, the packet is echoed back (returned).

Sample command-line PINGing and parameters are shown below. There are several available options that can be specified with the PING command. However, for our examples, we will use two options (-n and -w) which are commonly used when the response from the destination location is too long.

- n *count* : The number of echo requests that the command should send. The default is four.
- w *timeout* : Specifies the period PING will wait for the reply before deciding that the host is not responding.

## PINGing the Unit

```
C:\WINDOWS>ping ef1.labo.mgcs.com

Pinging ef1.labo.mgcs.com [192.168.3.5] with 32 bytes of data:

Reply from 192.168.3.5: bytes=32 time=5ms TTL=253
Reply from 192.168.3.5: bytes=32 time=4ms TTL=253
Reply from 192.168.3.5: bytes=32 time=4ms TTL=253
Reply from 192.168.3.5: bytes=32 time=4ms TTL=253
```

## PINGing the Default Gateway (Default Router IP Address)

```
C:\WINDOWS>ping 192.168.3.254

Pinging 192.168.3.254 with 32 bytes of data:

Reply from 192.168.3.254: bytes=32 time=5ms TTL=253
Reply from 192.168.3.254: bytes=32 time=4ms TTL=253
Reply from 192.168.3.254: bytes=32 time=4ms TTL=253
Reply from 192.168.3.254: bytes=32 time=4ms TTL=253
```

## PINGing the SMTP/POP Server

```
C:\WINDOWS>ping sv2.labo.mgcs.com

Pinging sv2.labo.mgcs.com [192.168.1.2] with 32 bytes of data:

Reply from 192.168.1.2: bytes=32 time=5ms TTL=253
Reply from 192.168.1.2: bytes=32 time=5ms TTL=253
Reply from 192.168.1.2: bytes=32 time=5ms TTL=253
Reply from 192.168.1.2: bytes=32 time=5ms TTL=253
```

If for some reason, the physical connection is missing, the echo reply will not be received from the destination and the following output is displayed:

```
C:\WINDOWS>ping fmrt7.labo.mgcs.com

Pinging fmrt7.labo.mgcs.com [192.168.4.1] with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.4.1:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

If the physical destination is far and it's connected by WAN (Wide Area Network), the PING option command default value must be changed to compensate for the expected delayed response.

e.g.

- n 10 : The number of echo requests that the command should send.
- w 2000 : Specifies the period PING will wait for the reply before deciding that the host is not responding.

```
C:\WINDOWS>ping js2.labo.mgcs.com -n 10 -w 2000

Pinging js2.labo.mgcs.com [210.232.71.18] with 32 bytes of data:

Reply from 210.232.71.18: bytes=32 time=633ms TTL=252
Reply from 210.232.71.18: bytes=32 time=645ms TTL=252
Reply from 210.232.71.18: bytes=32 time=810ms TTL=252
Reply from 210.232.71.18: bytes=32 time=455ms TTL=252
Reply from 210.232.71.18: bytes=32 time=645ms TTL=252
Reply from 210.232.71.18: bytes=32 time=633ms TTL=252
Reply from 210.232.71.18: bytes=32 time=677ms TTL=252
Reply from 210.232.71.18: bytes=32 time=703ms TTL=252
Reply from 210.232.71.18: bytes=32 time=633ms TTL=252
Reply from 210.232.71.18: bytes=32 time=633ms TTL=252
```

#### 4. Tracing a Packet Route

Another useful command-line utility is TRACERT, which is used to verify the route a packet takes to reach its destination. The result shows each router crossed and how long it took to get through each particular router to reach the specified destination.

The time it takes to get through a particular router is calculated three times and displayed for each router hop along with the IP Address of each router crossed. If a FQDN (Fully Qualified Domain Name) is available, it will be displayed as well.

**This utility is useful for two diagnostic purposes:**

- a. To detect whether a particular router is malfunctioning along a known path. For example, if you know that packets on a network always go through London to get from New York to Berlin, but the communication is failing. A TRACERT to the Berlin address shows all the hops up to the point where the router in London should respond. If it does not respond, the time values are shown with an asterisk (\*), indicating the packet timed out.
- b. To determine whether a router is slow and needs to be upgraded or additional routers should be installed on the network. You can determine this by simply comparing the time it takes for a packet to get through a particular router. If its return time is significantly higher than the other routers, it should be upgraded.

To use this utility, from the DOS command-line, type: `tracert <IP Address or Hostname>`

#### Tracing the Route to SMTP/POP Server

```
C:\WINDOWS>tracert sv2.labo.mgcs.com
Tracing route to sv2.labo.mgcs.com [192.168.1.2]
over a maximum of 30 hops:

  1  4 ms  2 ms  2 ms  192.168.3.254
  2  4 ms  5 ms  5 ms  sv2.labo.mgcs.com [192.168.1.2]

Trace complete.
```

## 5. Managing Network Route Tables

In the simplest case a router connects two network segments. In this model, the system used to join the two segments needs to know only about these segments.

The routing table for router R1 in this case is simple; the following table shows its key routes:

Network Address	Netmask	Gateway	Interface
192.168.3.0	255.255.255.0	192.168.3.254	192.168.3.254
192.168.1.0	255.255.255.0	192.168.1.253	192.168.1.253

When the Unit at 192.168.3.5 attempts to communicate with the Unit at 192.168.1.x, IP performs the ANDing process to find two things: The local network ID is 192.168.3.0, and the destination network ID is not. This means, that the destination host is not on the local network.

IP, is responsible to find a route to the remote network, and therefore, it consults the routing table. Here, the local host normally determines that the next step in the route is the Default Gateway, and sends the packet to router R1.

The router R1, receives the packet. After determining that the packet is for another host and not the router itself, it checks the routing table. It finds the route to 192.168.1.0 and sends the packet through the interface to the Unit at 192.168.1.x, which receives the packet. This is a simple route that took only a single hop.

When another network is added as the number of hosts grows, it gets complicated, and the systems on the most distant networks cannot communicate. When the router receives a packet in this case, it cannot find a route to the remote network. It then discards the packet and a message indicating "destination host unreachable" is sent to the originator.

Here, is where the ROUTE command-line utility is useful when dealing with more than two networks, and is used by Administrators to statically manage a route table by adding, deleting, changing and clearing the route table. It has a number of options that are used to manipulate the routing tables, some are shown below:

- MASK  
If this switch is present, the next parameter is interpreted as the netmask parameter.
- Netmask  
If included, specifies a sub-net mask value to be associated with this route entry. If not specified, it defaults to 255.255.255.255.
- Gateway  
Specifies the gateway.
- METRIC  
Specifies the metric / cost for the destination.

All symbolic names used for the destination are looked up in the network database file NETWORKS. The symbolic names for the gateway are looked up the host name database file HOSTS.

When the packet does not reach the specified destination even when the physical connection is properly made, check the registered persistent routes on the same subnet as the Unit by typing "route print" in the DOS command-line. The output display is shown below:

```
C:\WINDOWS>route print
Active Routes:

Network Address      Netmask            Gateway Address    Interface          Metric
0.0.0.0              0.0.0.0            192.168.3.254     192.168.3.2       1
127.0.0.0            255.0.0.0          127.0.0.1         127.0.0.1         1
192.168.3.0          255.255.255.0      192.168.3.2       192.168.3.2       1
192.168.3.2          255.255.255.255    127.0.0.1         127.0.0.1         1
192.168.3.255        255.255.255.255    192.168.3.2       192.168.3.2       1
224.0.0.0            224.0.0.0          192.168.3.2       192.168.3.2       1
255.255.255.255      255.255.255.255    192.168.3.2       192.168.3.2       1
```

## 6. Host Name Query on DNS Server

Windows NT/2000/XP also has a tool that enables you to test DNS to verify that it is working properly. This utility is not available on Windows 98/Me so you may take equivalent network tools from available Internet download site with many options.

From the DOS command-line, type "NSLOOKUP" to display the following output:

```
C:\>nslookup
Default Server: sv1.labo.mgcs.com
Address: 192.168.1.1
```

### NS(Name Server) record in Domain

From the DOS command-line, type "ls -t NS <Domain Name>" to display the following output:

```
> ls -t NS labo.mgcs.com.
[sv1.labo.mgcs.com.]
labo.mgcs.com.      NS  server = sv1.labo.mgcs.com
```

### MX(Mail Exchange) record in Domain

From the DOS command-line, type "ls -t MX <Domain Name>" to display the following output:

```
> ls -t MX labo.mgcs.com
[sv1.labo.mgcs.com]
labo.mgcs.com.      MX  10  sv2.labo.mgcs.com
```

### A (Address) record in Domain

From the DOS command-line, type "ls -t A <Domain Name>" to display the following output:

```
> ls -t A labo.mgcs.com
[sv1.labo.mgcs.com]
labo.mgcs.com.      NS  server = sv1.labo.mgcs.com
sv1                  A   192.168.1.1
sv2                  A   192.168.1.2
ec5                  A   192.168.1.4
ec4                  A   192.168.3.4
ef1                  A   192.168.3.5
```

(To leave from this menu, type "exit" on the command-line.)

## 7. Testing Unit Using the TELNET Command

TELNET is a terminal emulation protocol. TELNET enables PCs and workstations to function as dumb terminals in sessions with hosts on internet works.

From Windows 98/XP/Me/2000/NT, use the TELNET to test the communication of TCP/IP and SMTP Protocol manually to the Unit. This method eliminates the SMTP Server.

For better understanding, type "telnet" in the DOS Command-line to bring up the Telnet screen. Then, click on the Terminal menu and on Preferences, check the "Local Echo" and "Block Cursor" radio dials and click on the OK button.

Click on the Connect menu, then click on Remote System.

Enter "25" in the "Port:" field and click on Connect button.

For example,

```
C:\WINDOWS>telnet

telnet to ef1.labo.mgcs.com[192.168.3.5]

220 ef1.labo.mgcs.com DP18xx V.xx

helo
250 Hello

mail from:test
250 Sender OK

rcpt to:fax@labo.mgcs.com
250 Receiptient OK

data
354 Email, end with "CRLF . CR LF"

[Press the Enter Key]
Panasonic Internet Fax
test
test
[Press the Enter Key]
[Press the Enter Key]
[Press the Enter Key]
250 OK, Mail accept

quit
221 Closing transaction channel
```



## 4.6. Error Codes (For Copier)

The self-diagnostic functions detect troubles in the important components of the copier. When any trouble occurs, the copier stops.

**Note:**

Some Codes may not be used for DP-1510P/1810P, which are reserved for future use.

### 4.6.1. User Error Codes (U Code)

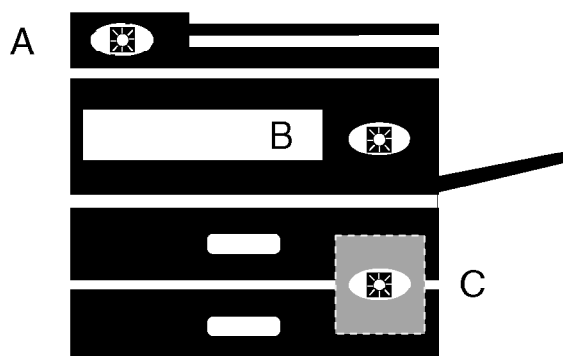
**Note:**

Uxx and a message will appear on the Panel Display.

User Error Codes (U Code) Table		
Code	Item	Check Points
U01	CLOSE FRONT/RIGHT COVER	<ol style="list-style-type: none"> <li>1. Front/Right Cover is open.</li> <li>2. Front Cover Sensor is disconnected.</li> <li>3. Front Cover Sensor is defective.</li> <li>4. LVPS connector is disconnected.</li> <li>5. LVPS is defective.</li> <li>6. LPC3 PCB connector is disconnected.</li> <li>7. LPC3 PCB is defective.</li> </ol>
U07	CLOSE FEED COVER	<ol style="list-style-type: none"> <li>1. Feed Cover is open.</li> <li>2. Feeder Unit is incorrectly installed.</li> <li>3. Feeder Unit connector is disconnected.</li> <li>4. Feeder Unit Sensor is disconnected.</li> <li>5. Feeder Unit Sensor is defective.</li> <li>6. LVPS connector is disconnected.</li> <li>7. LVPS is defective.</li> <li>8. CST4 PCB connector are disconnected.</li> <li>9. CST4 PCB is defective.</li> </ol>
U13	ADD TONER NO TONER WASTE CONTAINER	<ol style="list-style-type: none"> <li>1. Toner Bottle is incorrectly installed.</li> <li>2. Low Toner.</li> <li>3. Toner Sensor is disconnected.</li> <li>4. Toner Sensor is defective.</li> <li>5. LVPS connector is disconnected.</li> <li>6. LVPS is defective.</li> <li>7. LPC3 PCB connector is disconnected.</li> <li>8. LPC3 PCB is defective.</li> </ol>
U14	TONER WASTE CONTAINER IS FULL	<ol style="list-style-type: none"> <li>1. Toner Waste Container is incorrectly installed.</li> <li>2. Toner Waste Container is full of toner.</li> <li>3. Toner Waste Container Sensor connector is disconnected.</li> <li>4. Toner Waste Container Sensor is defective.</li> <li>5. LVPS connector is disconnected.</li> <li>6. LVPS is defective.</li> <li>7. LPC3 PCB connector is disconnected.</li> <li>8. LPC3 PCB is defective.</li> <li>9. SC PCB is defective.</li> </ol>
U16	NO TONER WASTE CONTAINER	<ol style="list-style-type: none"> <li>1. No Developer Unit.</li> <li>2. No Toner Waste Container.</li> </ol>

User Error Codes (U Code) Table		
Code	Item	Check Points
U20	CLOSE ADF COVER	<ol style="list-style-type: none"> <li>1. ADF Cover is open.</li> <li>2. ADF is not installed correctly.</li> <li>3. ADF Cover Sensor is disconnected.</li> <li>4. ADF Cover Sensor is defective.</li> <li>5. LVPS connector is disconnected.</li> <li>6. LVPS is defective.</li> </ol>
U21	CLOSE PLATEN COVER	While the copier is initializing, the ADF Cover was opened. (Optional ADF installed)
U90	REPLACE BATTERY	Backup Battery is wearing out.

#### 4.6.2. Jam Error Codes (J Code)



Section	Jam Location
A	ADF
B	Paper Transport / Exit Area
C	Paper Entry Area

Jam Error Codes (J Codes) Table		
Code	Contents	Section
J00	The Registration Sensor did not detect paper within a predetermined time after paper started feeding. (Sheet Bypass)	C
J01	The Registration Sensor did not detect paper within a predetermined time after the Paper Feed Roller started rotating. (1st Feeder Unit)	C
J02	The 2nd Registration Sensor does not detect paper within a predetermined time after the Paper Feed Roller started rotating. (2nd Feeder Unit)	C
J03	The 3rd Registration Sensor does not detect paper within a predetermined time after the Paper Feed Roller started rotating. (3rd Feeder Unit)	C
J04	The 4th Registration Sensor does not detect paper within a predetermined time after the Paper Feed Roller started rotating. (4th Feeder Unit)	C
J07	The Registration Sensor did not detect paper within a predetermined time after paper feed from 2nd Feeder Unit. (2/3/4 Feeder Unit)	C
J08	The Registration Sensor did not detect paper within a predetermined time after the Paper Feed Roller started rotating on the 3rd Feeder Unit. (3/4 Feeder Unit)	C
J09	The Registration Sensor did not detect paper within a predetermined time after the Paper Feed Roller started rotating on the 4th Feeder Unit. (4th Feeder Unit)	C
J12	The 2nd Registration Sensor did not detect paper within a predetermined time after the Paper Feed Roller started rotating.	C
J13	The 3rd Registration Sensor did not detect paper within a predetermined time after the Paper Feed Roller started rotating.	C
J14	The 4th Registration Sensor did not detect paper within a predetermined time after the Paper Feed Roller started rotating.	C
J22	The 2nd Registration Sensor detect paper at the time of the initials.	C
J23	The 3rd Registration Sensor detect paper at the time of the initials.	C
J24	The 4th Registration Sensor detect paper at the time of the initials.	C
J30	The Registration Sensor did not detect no paper within a predetermined time.	C
J33	The Registration Sensor detect paper at the time of the initials.	C
J34	The Registration Sensor did not detect paper within a predetermined time after Sensor 4 of Automatic Duplex Unit is ON. (DP-2010E Only)	C

Jam Error Codes (J Codes) Table		
Code	Contents	Section
J40	The eject paper Sensor does not detect paper within a predetermined time after Registration Sensor is ON.	C
J41	The eject paper Sensor does not detect no paper within a predetermined time after eject paper Sensor is ON.	C
J42	The Paper Exit Sensor detects paper when machine is standby.	C
J70	Read Point Sensor does not go ON within 10 seconds after the original starts feeding. (Information Code 030 is printed on the Transaction Journal instead.)	A
J71	Original was longer than 78.7 in (2m). (Information Code 031 or 032 is printed on the Transaction Journal instead.)	A
J80	The Automatic Duplex Unit Sensor 1 does not detect paper within a predetermined time. (DP-2010E Only)	B
J81	The Automatic Duplex Unit Sensor 2 does not detect paper within a predetermined time after Automatic Duplex Unit Sensor 1 is ON. (DP-2010E Only)	C
J82	The Automatic Duplex Unit Sensor 3 does not detect paper within a predetermined time after Automatic Duplex Unit Sensor 2 is ON. (DP-2010E Only)	C
J83	The Automatic Duplex Unit Sensor 4 does not detect paper within a predetermined time after Automatic Duplex Unit Sensor 3 is ON. (DP-2010E Only)	C
J84	The Automatic Duplex Unit Sensor 1 detects no paper within a predetermined time after Automatic Duplex Unit Sensor 1 is ON. (DP-2010E Only)	C
J85	The Automatic Duplex Unit Sensor 2 detects no paper within a predetermined time after Automatic Duplex Unit Sensor 2 is ON. (DP-2010E Only)	C
J86	The Automatic Duplex Unit Sensor 3 detects no paper within a predetermined time after Automatic Duplex Unit Sensor 3 is ON. (DP-2010E Only)	C
J87	The Automatic Duplex Unit Sensor 4 detects no paper within a predetermined time after Automatic Duplex Unit Sensor 4 is ON. (DP-2010E Only)	C
J88	The Automatic Duplex Unit Sensor 1 detects paper when machine is standby. (DP-2010E Only)	C
J89	The Automatic Duplex Unit Sensor 2, 3 or 4 detects paper when machine is standby. (DP-2010E Only)	C
J90	A PRINT signal is not received within 1 minute after the FEED signal is received.	-
J91	A Paper Tray is pulled out when feeding a paper.	-
J92	A Front Door Cover is opened when feeding a paper.	-

#### 4.6.3. Mechanical Error Codes (E Code)

<b>E1: Optical Unit Error</b>		
<b>Code</b>	<b>Function</b>	<b>Check Points</b>
E1- 20	Laser Unit Horizontal Synchronization	<ol style="list-style-type: none"> <li>1. LPC3 PCB connector(s) is disconnected.</li> <li>2. LPC3 PCB is defective.</li> <li>3. LSU is defective.</li> <li>4. LVPS connector is disconnected.</li> <li>5. LVPS is defective.</li> <li>6. LPC3/SC PCB connector is disconnected.</li> <li>7. SC/LPC3 PCB is defective.</li> </ol>
E1- 22	Polygon Motor Synchronization	<ol style="list-style-type: none"> <li>1. LPC3 PCB connector is disconnected.</li> <li>2. LPC3 PCB is defective.</li> <li>3. Laser Unit is defective.</li> <li>4. LVPS connectors is disconnected.</li> <li>5. LVPS is defective.</li> <li>6. LPC3/SC PCB connector is disconnected.</li> <li>7. SC PCB is defective.</li> </ol>

<b>E2: Lift DC Motor Error</b>		
<b>Code</b>	<b>Function</b>	<b>Check Points</b>
E2	Not Applicable	-

<b>E3: Development System Error</b>		
<b>Code</b>	<b>Function</b>	<b>Check Points</b>
E3- 01	Toner Bottle Motor Rotation	<ol style="list-style-type: none"> <li>1. Toner Bottle Motor connector is disconnected.</li> <li>2. Toner Bottle Motor drive mechanism is defective.</li> <li>3. Toner Bottle Motor is defective.</li> <li>4. Toner Bottle Motor Home Position Sensor connector is disconnected.</li> <li>5. LVPS connector is disconnected.</li> <li>6. LVPS is defective.</li> <li>7. LPC3 PCB connector(s) is disconnected.</li> <li>8. LPC3 PCB is defective.</li> </ol>
E3- 20	Printer Motor (DC Motor) Rotation	<ol style="list-style-type: none"> <li>1. Printer motor connector is disconnected.</li> <li>2. Printer motor is defected.</li> <li>3. LVPS connector is disconnected.</li> <li>4. LVPS is defective.</li> <li>5. LPC3 PCB connector is disconnected.</li> <li>6. LPC3 PCB is defective.</li> </ol>

<b>E4: Fuser Unit Error</b>		
<b>Code</b>	<b>Function</b>	<b>Check Points</b>
E4- 01	Fuser Warm-up Temperature	1. Fuser Thermistor is dirty. 2. Thermistor position is incorrect. 3. Fuser temperature is low. (Adjust F6-31) 4. Thermistor is defective. 5. Fuser Lamp connector is disconnected. 6. Fuser Thermostat is defective. 7. Fuser Lamp is defective. 8. HTC PCB connector is disconnected. 9. HTC PCB is defective.
E4- 02	Paper Jam	1. Paper Jam in Fuser Unit.
E4- 10	Exhaust Fan Motor Rotation (Fuser Unit Side)	1. Exhaust Fan connector is disconnected. 2. Exhaust Fan is defective. 3. LVPS connector is disconnected. 4. LVPS is defective. 5. LPC3 PCB is defective.

<b>E5: System Error</b>		
<b>Code</b>	<b>Function</b>	<b>Check Points</b>
E5- 11	Thermistor, Toner Sensor	1. SC/LPC3 PCB connector is disconnected. 2. SC/LPC3 PCB is defective.
E5- 12	Main CPU/LPC Interface Error	1. SC/LPC3 PCB connector is disconnected. 2. SC/LPC3 PCB is defective.
E5- 13	LPC System Error	1. SC/LPC3 PCB connector is disconnected. 2. SC/LPC3 PCB is defective.
E5- 14	Option Installation Error	1. SC/LPC3 PCB connector is disconnected. 2. SC/LPC3 PCB is defective.
E5- 15	Mechanical Total Counter Not Installed	1. SC/LPC3 PCB connector is disconnected. 2. SC/LPC3 PCB is defective.
E5- 22	Finisher Communication	1. SC/LPC3 PCB connector is disconnected. 2. SC/LPC3 PCB is defective.

<b>E7: Optional Unit Error</b>		
<b>Code</b>	<b>Function</b>	<b>Check Points</b>
E7- 10	Sub CPU System Error	SC PCB is defective.
E7- 11	Abnormal Platen Glass Scanning	SC PCB is defective.
E7- 12	Scanner Lamp is disconnected	SC PCB is defective.

**Note:**

These error codes will appear only when the optional accessories are installed. Refer to Optional Unit Service Manuals.

## 4.7. Information Codes Table (For Facsimile)

Fax Information Codes				
Code	Mode	Phase	Description of Problem	Cause
012	RCV	C, D	The length of the received document is over 2 m.	
030	XMT	B	Read Point Sensor does not go to ON within 10 seconds after the document starts feeding.	Document is not set properly. Defective Read Point Sensor.
031	XMT COPY	C	Transmitting document was longer than 2,000 mm (or 78.7 in).	The document may jam. Defective Read Point Sensor.
061	-	A	ADF Door is open.	Cover is not firmly closed. Connectors are not firmly connected.
200	RCV	C	Decoding process is not completed at the end of phase C.	Defective SC PCB.
212	XMT RCV	A-E	Interface error occurred between the CPU and modem.	Modem is defective. (SC PCB) Software problem occurred. (SC PCB)
301	XMT RCV		System fault.	Software problem occurred. (SC PCB)
331	XMT	C	8-minutes timer error. (Germany only)	
360	-	-	Incomplete initialization for EP PCB.	EP PC Board incorrectly installed on the SC PC Board. FRM PC Board incorrectly installed on the EP PC Board. Defective EP PC Board. Defective FRM PC Board. Defective SC PC Board.
361	-	-	DPRAM (Dual Port RAM) initialization error on EP PCB.	EP PC Board incorrectly installed on the SC PC Board. FRM PC Board incorrectly installed on the EP PC Board. Flash ROM on the FRM PC Board is blank. Defective EP PC Board. Defective FRM PC Board. Defective SC PC Board.
362	-	-	Command Sequence Error.	Software problem occurred. (SC/FRM PCB)
400	XMT	B	T1 timer (35±5 sec) elapsed without detecting 300 bps signal.	Wrong number is dialed and the START button is pushed. Telephone line is disconnected while dialing. SC PCB (Modem) or MJR PCB is defective. Receiver is defective. (It may only be transmitting CED)
401	XMT	B	DCN was returned from receiver while transmitter is waiting for CFR or FTT.	Your machine's ID Number is not programmed. Possible incompatibility or incorrect Password (Password Reception, Selective Receive). Mailbox is full.

Fax Information Codes				
Code	Mode	Phase	Description of Problem	Cause
402	XMT	B	DCN was returned from receiver while transmitter is waiting for NSF/DIS.	Receiver working in non-CCITT mode only. (Possible incompatibility)
403	RCV (Polling)	B	Transmitter had no polling function.	"POLLED=ON" (polling XMT ready) is not set at the transmitter. Document to be transmitted is not placed at the transmitter.
404	XMT	B	Transmitter sent NSS (or DCS) followed by TCF three times, but the receiver did not respond. (CFR or FTT is usually returned)	Receiver is defective. (Modem, MJR PCB, etc.) SC PCB or MJR PCB is defective. Receiver disconnects line during first NSS (or DCS) is transmitted.
405	XMT	B	Transmitter received FTT after it transmitted TCF at 2400 bps. Received RTN after communicating at 2400 bps.	Line quality is poor. (TCF is damaged due to line noise) Receiver is defective. (Modem, MJR PCB, etc.) SC PCB or MJR PCB is defective.
406	RCV (Password Comm.)	B	XMT-Password mismatched. RCV-Password mismatched. Selective RCV incomplete.	XMT, RCV password does not match. Last 4 digits of TSI does not match with the last 4 digits of Auto Dial telephone number.
407	XMT	D	Transmitter received no response after it transmitted post message, such as EOP, MPS, EOM, etc...or received DCN.	Receiver is defective. (No paper, paper jamming, etc.) Receiver ceased receiving because of excessive error. (Line quality is poor) SC PCB (Modem) or MJR PCB is defective.
408	XMT	D	Transmitter received RTN after it transmitted EOP, MPS, or EOM.	Receiver receives data with error. (Line quality is poor) Receiver is defective. (Modem, MJR PCB, etc.) SC PCB or MJR PCB is defective.
409	XMT	D	Transmitter receives PIN after it transmitted a post message, such as EOP, MPS, EOM, etc.	Receiver receives data with error due to poor line quality, and receiving operator requests voice contact. Receiver is defective. (Modem, MJR PCB, etc.) SC PCB or MJR PCB is defective.
410	RCV	D	Received DCN while waiting for post command. (EOP, MPS, EOM, etc.)	Interface or line is faulty. Transmitter is defective.
411	RCV (Polling)	B	Received DCN after transmitting NSC.	Transmitter is not ready for polling communication. Password does not match between transmitter and receiver.
412	G3 RX	B, D	No response within 12 seconds in NSS/DCS/MPS wait state. (After transmitting FTT)	Transmitter is defective. SC PCB is defective.
414	RCV (Polling)	B	No response received after transmitting 3rd NSC.	Password does not match between transmitter and receiver. Transmitter is defective. (No original, document jam, etc.)



Fax Information Codes				
Code	Mode	Phase	Description of Problem	Cause
415	XMT (Polling)	B	Remote side attempted to receive message from your machine in polling communication.	Inform the remote side that your machine does not have the polling transmission feature.
416	RCV	D	Receiver did not detect post command, such as EOP, MPS, EOM, etc.	Transmitter is defective. Line quality is poor. (RTC signal is distorted due to line noise) SC PCB or MJR PCB is defective.
417	RCV	C	Receiver returned RTN in response to post message.	Line quality is poor. (There are excessive errors in received data) SC PCB or MJR PCB is defective.
418	RCV	C	Receiver transmitted PIN in response to PRI-Q from transmitter. (Transmitting operator requests voice contact)	Line quality is poor. (There are excessive errors in received data) SC PCB or MJR PCB is defective.
420	RCV	B	T1 timer (35 sec.) elapsed without detecting 300 bps signal.	There is wrong incoming call. (Non-facsimile communication) Transmitter is defective. SC PCB or MJR PCB is defective.
421	RCV	B	Busy Tone is detected after sending NSF Signal.	Remote station disconnected the line. Wrong number is dialed.
422	XMT	B	Content of NSF (or DIS) or NSC (or DTC) was invalid.	There is an incompatibility.
427	G3 RCV	B	DCN received to NSF/CSI/DIS transmitted.	The interface is incompatible.
433	XMT RCV	B, D	T.30 Protocol abnormal.	Defective remote station.
434	XMT or RCV	B	CD (response from Modem) did not turn OFF within 180 sec. after receiver detected FLAG signal.	Remote unit is defective. SC PCB or MJR PCB is defective.
436	G3 RX	C	DCN received after transmitting FTT.	Transmitter is defective or incompatible. Line quality is poor.
456	RCV	B	Received relay transfer request or confidential document to distribute to an end receiving station or all confidential mailboxes are used.	
457	RELAY XMT CONF. XMT/ POLL	B	Remote unit does not have Relayed XMT or Confidential Comm. capability.	
459	RCV	C	Failed training in Phase C.	Line quality is poor. (Training signal is distorted due to line noise) SC PCB or MJR PCB is defective.
490	RCV	C	Sum of error lines exceeded the limit (Function Parameter No. 70) of 64 lines.	Line quality is poor. SC PCB or MJR PCB is defective.
494	RCV	C	Interval between two EOLs was more than 10 sec. when receiver received message data.	Transmitter is defective. Line quality is poor. (EOL is damaged due to line noise) SC PCB or MJR PCB is defective.

Fax Information Codes				
Code	Mode	Phase	Description of Problem	Cause
495	XMT RCV	C	During reception, CD turned OFF or continued ON for long time. During communication, lost loop - current.	Line is disconnected. Transmitter is defective. SC PCB or MJR PCB is defective.
496	XMT	C	CS of modem is not able to turn ON.	SC PCB is defective.
501	XMT/ RCV(V.34)	B	Remote unit does not have compatible Modem.	
502	XMT/ RCV(V.34)	B, C, D	During reception, CD turned OFF or continued ON for long time. During communication, lost loop - current.	Line is disconnected. Transmitter is defective. SC PCB or MJR PCB is defective.
503	XMT/ RCV(V.34)	B, C, D	CS of modem is not able to turn ON during training.	SC PCB is defective. Line is disconnected.
504	RCV/V.34 (Polling)	B	Polling is rejected from the remote station.	No polling original is set.
505	XMT/V.34 (Polling)	B	Polling XMT is rejected.	No polling original is set.
540	XMT ECM	B	No response after transmitting 3rd CTC or DCN received.	Incompatible interface.
541	XMT ECM	D	No response after transmitting 3rd EOR or received DCN.	Line is faulty. MJR PCB abnormal.
542	XMT ECM	D	No response to the 3rd RR transmitted or received DCN.	Remote unit is abnormal.
543	XMT ECM	D	T5 timer (60 sec.) elapsed without MCF.	Remote unit is abnormal.
544	XMT ECM	D	Stopped Transmission after EOR Transmission.	Line is faulty. MJR PCB abnormal.
550	RCV ECM	C	Timer between frames in phase C has elapsed.	Defective remote station.
554	RCV ECM	D	Transmitted ERR after receiving EOR.	Faulty line.
555	RCV ECM	D	Transmitted PIN after receiving EOR.	Faulty line and Operator Call requested by RX side.
570	RCV	B	Password or machine code did not match during remote diagnostic communication.	
571	XMT	B	Remote unit did not have the remote diagnostic function.	
580	XMT	B	Sub-address transmission to a unit that has their DIS bit 49 (NSF bit 155) OFF.	Sub-address transmission to a unit that has no Sub-address function.
581	XMT	B	Sub-address Password transmission to a unit that has their DIS bit 50 (NSF bit 156) OFF.	Sub-address transmission to a unit that has no Sub-address function.
601	XMT		ADF Door was opened during ADF transmission.	
623	XMT	A	No original was in the ADF. (Built-in dialer engaged)	Operator removed the original from the ADF after dialing was completed. Original was not set properly in the ADF.

Fax Information Codes				
Code	Mode	Phase	Description of Problem	Cause
630	XMT or RCV (Polling)	B	Redial count over.	No dial tone detected. Sensor dial tone is not detected. (country dependent) Busy tone is detected. (country dependent) T1 timer (35±5 sec) elapsed without a signal from the receiver.
631	XMT	A	"STOP" button was pressed during Auto Dialing.	
634	XMT		Redial count over with no response or busy tone was not detected. <b>Note:</b> U.S.A. and Canadian models will redial only once if a busy tone is not detected.	
638	XMT		Power turned off with applicable data in memory or during communication.	Power switched off. Power failure occurred.
710	XMT RCV	LAN	Command Response between LANC/LANB PCB timed out.	Defective LANC/LANB PCB.
712	XMT	LAN	Unknown email address replied from the Mail Server.	Mail Server received an incorrect email address. (Dependent on Server's Mail application)
713	XMT	LAN	Memory overflow in the LAN Interface.	The document data exceeded 1.6 Mbyte/page and cannot be sent.
714	XMT RCV	LAN	LAN Interface error. Cannot logon to the LAN.	The 10Base-T/100Base-TX cable is not connected. An unexpected LAN problem occurred. Check the LANC/LANB PCB connector.
715	XMT	LAN	TCP/IP connection timed out.	Incorrect IP Address is set. Verify the IP Address, Default Router IP Address, SMTP Server IP Address.
716	XMT	LAN	Cannot logon to the LAN.	Incorrect SMTP Server IP Address is set. No email application is activated on the Mail Server.
717	XMT	LAN	Incomplete SMTP Protocol transmission.	Mail Server's hard disk may be full. Mail Server is defective.
718	XMT	LAN	Page Memory Overflow occurred while receiving printing data. The paper size selected within your application to print is larger than the paper size loaded in the cassette(s).	Check the document size and resolution. Ask originator to re-send in a supported size and resolution.
719	RCV	LAN	Received data via LAN is in a format that is not supported.	Ask the originator to re-send with a supported file attachment: * In a TIFF-F format. * Image data conforming to A4/Letter size.
720	POP	LAN	Unable to connect with the POP Server.	Incorrect POP Server address is set. POP Server is down.
721	POP	LAN	Unable to login to the POP Server.	Incorrect User Name or Password is set.

Fax Information Codes				
Code	Mode	Phase	Description of Problem	Cause
725	XMT POP	LAN	DNS Server connection timed out.	Incorrect DNS Server address is set. DNS Server is down.
726	XMT POP	LAN	Received an error response from the DNS Server.	Incorrect POP Server address is set. Incorrect SMTP Server address is set.
730	RCV	LAN	Unable to program the Internet parameters or the autodialer with Email from a PC.	Verify that the Fax Parameter #158 is set to 2: Valid.
731	RCV	LAN	Dialer full while Relayed Transmission Request was received.	Dial buffer for manual number dialing (70 stations) are being used.
741	XMT, Polling		Unable to dial	Deleted the registered station name before dialing with Timer Controlled Communications, etc.
800	Relay Comm.		The machine was requested to relay a document but has no Relay Hub capability.	
814	Conf. XMT Conf. Polling Relay Comm.		The remote station does not have Relay XMT nor Confidential Communication capability.	
815	Conf. RCV		Mailbox is full.	
816	Conf. Polled		The received Polling Password did not match.	
825	Conf. RCV Conf. Polled		Parameter settings of the remote station are not properly set.	
870	MEM XMT Multi-Copy		Memory overflow occurred while storing documents into memory.	
879	Memory RCV	PSTN	Memory overflow occurred during substitute memory reception.	
		LAN	Memory overflow. Mail Server sent a reset command while downloading the data to the machine.	Memory overflow on the Fax side. Mail server aborted the download (Busy with other higher priority jobs).
880	-	-	File Access Error.	
884	-	-	File Access Error.	
961	RCV	LAN	Memory file access error.	SC PCB is defective.
962	XMT	PSTN	Memory file access error.	SC PCB is defective.
		LAN	Memory file access error.	SC PCB is defective.

## 4.8. Diagnostic Codes (For Facsimile)

The 13-digit Diagnostic Code is provided for the service engineer to analyze how the communication was performed. The code is recorded on the Journal.

### Journal Example

***** -JOURNAL- ***** DATE MMM-dd-yyyy ***** TIME 09:39*****									
NO.	COMM.	PAGES	FILE	DURATION	X/R	IDENTIFICATION	DATE	TIME	DIAGNOSTIC
01	OK	001	129	00:00'42	XMT	123 456 789	MMM-dd	01:55	C8649003C0000
								1st digit	13th digit
-----									
- PANASONIC DP-1810F									
***** - PANASONIC DP-1810F- ***** -12345678901234567890- *****									

### 1st Digit: Manufacturer Code

-: Not used/defined

Fax Diagnostic Codes				
Data	Definition			
	Manufacturer Code			
0	-			
1	Casio			
2	Canon			
3	Sanyo			
4	Sharp			
5	Tamura			
6	Toshiba			
7	NEC			
8	Oki			
9	Hitachi			
A	Xerox			
B	Fujitsu			
C	Matsushita			
D	Mitsubishi			
E	Murata			
F	Ricoh			

## 2nd Digit

-: Not used/defined

Fax Diagnostic Codes				
Data	Definition			
	ID (TSI, CSI, CIG)	RTN	DCN	STOP Button
0	-	-	-	-
1	Received	-	-	-
2	-	Received	-	-
3	Received	Received	-	-
4	-	-	Received	-
5	Received	-	Received	-
6	-	Received	Received	-
7	Received	Received	Received	-
8	-	-	-	Pressed
9	Received	-	-	Pressed
A	-	Received	-	Pressed
B	Received	Received	-	Pressed
C	-	-	Received	Pressed
D	Received	-	Received	Pressed
E	-	Received	Received	Pressed
F	Received	Received	Received	Pressed

## 3rd Digit

-: Not used/defined

Fax Diagnostic Codes				
Data	Definition			
	Resolution (dpi)	Paper Width		
0	-	A4		
1	S-Fine	A4		
2	400 x 400	A4		
3	300 x 300	A4		
4	-	B4		
5	S-Fine	B4		
6	400 x 400	B4		
7	300 x 300	B4		
8	-	-		
9	-	-		
A	-	-		
B	-	-		
C	-	A3		
D	S-Fine	A3		
E	400 x 400	A3		
F	300 x 300	A3		

#### 4th Digit

-: Not used/defined

Fax Diagnostic Codes				
Data	Definition			
	Scanning Rate	Resolution		
0	20 ms/line	Std		
1	5 ms/line	Std		
2	10 ms/line	Std		
3	-	Std		
4	40 ms/line	Std		
5	-	Std		
6	-	Std		
7	0 ms/line	Std		
8	20 ms/line	Fine		
9	5 ms/line	Fine		
A	10 ms/line	Fine		
B	-	Fine		
C	40 ms/line	Fine		
D	-	Fine		
E	-	Fine		
F	0 ms/line	Fine		

#### 5th Digit

-: Not used/defined

Fax Diagnostic Codes				
Data	Definition			
	Deferred Comm.	Dialing/RCV	Memory/ Non-Memory	
0	-	Manual Communication	Non-Memory	
1	Used	Manual Communication	Non-Memory	
2	-	Auto Dialing	Non-Memory	
3	Used	Auto Dialing	Non-Memory	
4	-	Auto RCV	Non-Memory	
5	Used	Auto RCV	Non-Memory	
6	-	Remote RCV	Non-Memory	
7	Used	Remote RCV	Non-Memory	
8	-	Manual Communication	Memory	
9	Used	Manual Communication	Memory	
A	-	Auto Dialing	Memory	
B	Used	Auto Dialing	Memory	
C	-	Auto RCV	Memory	
D	Used	Auto RCV	Memory	
E	-	Remote RCV	Memory	
F	Used	Remote RCV	Memory	

# 6th Digit

-: Not used/defined

Fax Diagnostic Codes				
Data	Definition			
	Polling	XMT/RCV	Selective Comm.	Password Comm.
0	-	RCV	Off	Off
1	Yes	RCV	Off	Off
2	-	XMT	Off	Off
3	Yes	XMT	Off	Off
4	-	RCV	On	Off
5	Yes	RCV	On	Off
6	-	XMT	On	Off
7	Yes	XMT	On	Off
8	-	RCV	Off	On
9	Yes	RCV	Off	On
A	-	XMT	Off	On
B	Yes	XMT	Off	On
C	-	RCV	On	On
D	Yes	RCV	On	On
E	-	XMT	On	On
F	Yes	XMT	On	On

# 7th Digit

-: Not used/defined

Fax Diagnostic Codes				
Data	Definition			
	Sub-Address Comm.	Confidential Comm.	Relayed Comm.	Turnaround Polling
0	-	-	-	-
1	Yes	-	-	-
2	-	Yes	-	-
3	Yes	Yes	-	-
4	-	-	Yes	-
5	Yes	-	Yes	-
6	-	Yes	Yes	-
7	Yes	Yes	Yes	-
8	-	-	-	Yes
9	Yes	-	-	Yes
A	-	Yes	-	Yes
B	Yes	Yes	-	Yes
C	-	-	Yes	Yes
D	Yes	-	Yes	Yes
E	-	Yes	Yes	Yes
F	Yes	Yes	Yes	Yes



### 8th Digit

-: Not used/defined

Fax Diagnostic Codes				
Data	Definition			
	Advanced Comm.	Cover Sheet XMT		
0	-	-		
1	Report XMT	-		
2	Check & Call	-		
3	-	-		
4	Memory Transfer	-		
5	-	-		
6	-	-		
7	-	-		
8	-	Yes		
9	Report XMT	Yes		
A	Check & Call	Yes		
B	-	Yes		
C	Memory Transfer	Yes		
D	-	Yes		
E	-	Yes		
F	-	Yes		

### 9th Digit

-: Not used/defined

Fax Diagnostic Codes				
Data	Definition			
	Short Protocol	Standard/ Non-Standard		
0	-	Standard		
1	-	Standard		
2	-	Standard		
3	-	Standard		
4	-	Standard		
5	-	Standard		
6	-	Standard		
7	-	Standard		
8	-	Non-Standard		
9	B	Non-Standard		
A	-	Non-Standard		
B	D	Non-Standard		
C	-	Non-Standard		
D	B	Non-Standard		
E	-	Non-Standard		
F	D	Non-Standard		

# 10th Digit

-: Not used/defined

Fax Diagnostic Codes				
Data	Definition			
	Coding	ECM		
0	MH	-		
1	MR	-		
2	MMR	-		
3	JBIG	-		
4	-	-		
5	-	-		
6	-	-		
7	-	-		
8	MH	Yes		
9	MR	Yes		
A	MMR	Yes		
B	JBIG	Yes		
C	-	Yes		
D	-	Yes		
E	-	Yes		
F	-	Yes		

# 11th Digit

-: Not used/defined

Fax Diagnostic Codes				
Data	Definition			
	Symbol Rate (V.34)	V.34		
0	-	-		
1	-	-		
2	-	-		
3	-	-		
4	-	-		
5	-	-		
6	-	-		
7	-	-		
8	2400 sr	Yes		
9	-	Yes		
A	2800 sr	Yes		
B	3000 sr	Yes		
C	3200 sr	Yes		
D	3429 sr	Yes		
E	-	Yes		
F	-	Yes		

### 12th Digit

-: Not used/defined

Fax Diagnostic Codes				
Data	Definition			
	Modem Speed	Modem Speed (V.34)		
0	2400 bps	-		
1	4800 bps	2400 bps		
2	7200 bps	4800 bps		
3	9600 bps	7200 bps		
4	TC 7200 bps	9600 bps		
5	TC 9600 bps	12000 bps		
6	12000 bps	14400 bps		
7	14400 bps	16800 bps		
8	-	19200 bps		
9	-	21600 bps		
A	-	24000 bps		
B	-	26400 bps		
C	-	28800 bps		
D	-	31200 bps		
E	-	33600 bps		
F	-	-		

### 13th Digit

-: Not used/defined

Fax Diagnostic Codes				
Data	Definition			
0				
1				
2				
3				
4				
5				
6				
7				
8				
9				
A				
B				
C				
D				
E				
F				

## 4.9. Troubleshooting (For PCL 6 Emulation Kit)

### 4.9.1. Checking the Basics

This section explains how to solve problems including error messages or unexpected printing results.

If the Panasonic Printing System (PCL) is not printing or working as expected, and if you are not sure what to do, start your troubleshooting by checking the basics below:

- Ensure that the Ethernet LAN (10Base-T / 100Base-TX) Cable is connected properly
- Ensure that the Internet Parameters are correct
- Ensure that the Panasonic Device is turned on
- Ensure that the Paper is set properly on the Panasonic Device
- No error message is displayed on the Panasonic Device
- Try printing a test page from the printer driver properties dialog box

### 4.9.2. Document Does Not Print Properly

Problem	Solutions
Character is not printing in the correct positions or the characters near the edges of the page are missing.	<ul style="list-style-type: none"> <li>• Check and specify the paper size and orientation settings in the printer driver to coincide with the application.</li> <li>• Check if the specified paper is loaded in the Panasonic Device.</li> <li>• Increase the Page Margins in the application. The Panasonic Device requires minimum margins of ¼ inches (4 mm) on all sides.</li> </ul>
The font type is wrong.	<ul style="list-style-type: none"> <li>• Check if the selected font is installed in the PC.</li> <li>• Check if the selected font is being replaced with a proper printer font in the Font Substitution Table of the Printer Driver Properties dialog box.</li> <li>• Select <b>"Always use TrueType fonts"</b> from the <b>Font</b> tab of the Printer Driver Properties dialog box.</li> </ul>
The character is not smooth.	<ul style="list-style-type: none"> <li>• Select a outline font instead of a bit map font.</li> </ul>
Fine line print cannot be obtained.	<ul style="list-style-type: none"> <li>• Select 600 dpi resolution.</li> </ul>
Poor photograph print quality.	<ul style="list-style-type: none"> <li>• Select 600 dpi resolution.</li> </ul>
Different character or symbol from the document is printed.	<ul style="list-style-type: none"> <li>• Check if the Panasonic Printing System (PCL) printer driver is selected.</li> </ul>
The printer does not print anything or prints irregular images from the middle of the 1 <sup>st</sup> page.	<ul style="list-style-type: none"> <li>• Insufficient Printer Page Memory in the Panasonic Device, install an Expansion D-RAM Card or change the resolution to 300 dpi in the <b>Quality</b> tab of the Printer Driver Properties dialog box.</li> </ul>
Printing is exceedingly slow.	<ul style="list-style-type: none"> <li>• Select the Spool settings <b>"Start printing after first page is spooled"</b> from the <b>Details</b> tab of the Printer Driver Properties dialog box.</li> <li>• Select 300 dpi resolution.</li> </ul>

#### 4.9.3. Error Message appears on the PC

Error Message	Solutions
Network Print DLL Error.	<ul style="list-style-type: none"> <li>Check if the Panasonic Device is turned "On" and the 10Base-T/100Base-TX cable is properly connected.</li> <li>Printer Properties may be incorrectly configured. (i.e. Printer Port)</li> </ul>
Network Port is Busy.	<ul style="list-style-type: none"> <li>The Panasonic Device may be processing someone's print job, please wait and try again later.</li> <li>The Panafax facsimile unit is either Transmitting or Receiving an email.</li> </ul>
Cannot print because an error is found in the current printer setting.	<ul style="list-style-type: none"> <li>Verify and specify the paper size or orientation to coincide with the application and the printer driver settings.</li> </ul>

#### 4.9.4. Error Message appears on the Unit

Error Message	Solutions
Cannot complete print job Image memory overflow	<ul style="list-style-type: none"> <li>The available Sort Memory in the Panasonic Device may not be enough. Either install an optional Sort Memory or change the resolution to 300 dpi in the Printer Driver Properties dialog box.</li> </ul>
Can not complete Confirm print condition	<ul style="list-style-type: none"> <li>The print condition may not be matched for the system. Change the printing condition in the Printer Driver Properties dialog box. i.e. Multi-sized printing with stapling order.</li> </ul>
Cannot print System error	<ul style="list-style-type: none"> <li>Change the resolution to 300 dpi in the Printer Driver properties dialog box.</li> </ul>

#### 4.9.5. System Error (CD drive related error during installation)

Problem	Solutions
Can not read the drive.	<ul style="list-style-type: none"> <li>Insert the CD into the drive and click "Retry".</li> </ul>

## 5 Service Modes

### 5.1. Service Modes (For Copier)

These service modes are provided to assist the technician in checking for abnormalities in the copier and a means of making adjustments to the Input/Output of major components.

#### 5.1.1. Service Mode Procedure

1. To select the service mode

The service mode is selected when "FUNCTION", "ORIGINAL SIZE" and "3" keys are sequentially pressed, then F1 will appear in the display.

2. To exit the service mode

The service mode is reset when the "FUNCTION" and "CLEAR" keys are pressed simultaneously.

#### 5.1.2. Service Mode Functions

Service Modes				
Service Mode	Item			Function
F1	Self Test	00	CCD Test	This test is used for checking the CCD.
		01	LCD/LED Test	This test is used for checking the LCD and LEDs.
		02	Page Memory Test	This test is used for checking the Page Memory.
		03	Print Test Pattern 1	Prints the pattern for setting the Paper position alignment.
		04	Print Test Pattern 2	<b>Factory use only.</b>
		05	PRT PWM Adj. Pattern	Prints the gray steps when the Start key is pressed. <b>(Factory use only)</b>
F2	Single Copy Test			One sheet is copied when the Start key is pressed.
F3	Continuous Copy Test			Multi copies are made when the Start key is pressed.
F4	Input / Output Status Test			The functioning of Input / Output items (selected item numbers) is checked.
F5	Function Parameters			Various function settings (selected by code numbers) can be changed.
F6	Adjustment Parameters			Various function settings (selected by code numbers) can be adjusted.

Service Modes				
Service Mode	Item			Function
F7	Electronic Counter	00	Not Used	
		01	Key Operator ID	Key Operator's identification code for access to the counter mode.
	Maintenance Count	02	Total Count	Total count for all copies / prints.
		03	PM Count	Preventive Maintenance count.
		04	Scanner PM Count	PM count for scanner read.
		05	ADF/i-ADF PM Count	PM count for originals fed.
		06	OPC Drum Count	PM count for OPC Drum paper fed.
		27	Drum Rotate Equivalent	PM count for OPC Drum Round Time.
		07	Process Unit Count	PM count for Process Unit paper fed.
		08	Paper Transport Count (See Note)	PM count for Paper Transport Unit paper fed.
	Paper Feed Count	11	Sheet Bypass Count	Total count of paper fed from the sheet bypass.
		12	1st Paper Tray Count	Total count of paper fed from the 1st paper tray.
		13	2nd Paper Tray Count	Total count of paper fed from the 2nd paper tray.
		14	3rd Paper Tray Count	Total count of paper fed from the 3rd paper tray.
		15	4th Paper Tray Count	Total count of paper fed from the 4th paper tray.
	Scanner Count	16	ADF/i-ADF Count	Total count of originals fed through the ADF/i-ADF.
		17	ADF/i-ADF Read Count	Total count of originals scanned through the ADF/i-ADF.
		18	Scanner Count	Total count of scanning operations.
		19	Scanner Read Count	Total count of scanner read.
	Copy Count	20	Copy Print Count	Total count of copies printed.
		21	Copy Scan Count	Total count of copies scanned.
	PC Count	22	PC Print Count	Total count printed from PC.
		23	PC Scan Count	Total count scanned from PC.
	Fax Count	24	Fax Transmit Count	Total count of Fax transmitted.
		25	Fax Receive Count	Total count of Fax received.
		26	Fax Print Count	Total count of Fax printed.
	99	All Counter Clear		Press START to Clear.

Service Modes		
Service Mode	Item	Function
F8	Service Adjustment	Perform pseudo-operation of an item (selected by code numbers).
	00 CHK Mirror Movement	When replacing the exposure lamp. Procedure: a) Press the Start key to move the exposure lamp to the position (approx. 9.8 in / 250mm from the optics home position) where it can be replaced. b) To return the optical system to the home position, press the STOP key.*
	06 Error Log Print/View	a) Each time the arrow key is pressed, the machine errors or paper jam codes stored in memory are displayed, beginning with the oldest code. <b>Note:</b> Only the 30 most recent codes are displayed.
	07 Error Log Clear	a) Press the Reset key. A Message "Error code can be cleared with the Start key" is displayed on the LCD.* b) Press the Start key.
	19 Move Mirror To Lock	a) Press the Start key then the mirror unit moves to locked position for transporting the copier. b) When the mirror unit is locked, any digit key input is not be accepted. <b>Note:</b> The lock operation is automatically reset when the Power switch is turned ON again.
	47 ADF Continuous Test	Press START key to start.
	48 Book Scan Test	Press START key to start.



Service Modes				
Service Mode	Item			Function
F9	Unit Maintenance	00	Fax Function Parameters	
		01	Service Alert Tel #	Displays the contact number when a machine malfunction occurs.
		02	Firmware Version	00 Host
				02 Scanner
				03 Printer
				05 Printer Board (PDL)
				06 LAN Board
				08 Modem
		03	Print Device Info.	00 F5/F6 Parameters
				01 Printer Report
				02 Counter Information
				03 System Addr. Info.
				04 RAM Addr. Info.
		04	RAM Edit Mode	
		06	RAM Initialize	00 Parameter Initialize
				01 All Job Clear
				02 LBP Error Log Clear
				03 Shipment Set
				04 LBP Fuser Reset
		07	Firmware Update	00 Host Program (4MB)
				01 Host Part A (2MB)
				02 Host Part B (2MB)
				03 PDL Board (2MB)
				04 LAN Board (2MB)
				05 PC → Host Program
		08	Firmware Backup	00 Host Program (4MB)
				01 Host Part A (2MB)
				02 Host Part B (2MB)
		09	PC → Flash Card	
		10	Page Memory Size	
		11	Sort Memory Size	

## F5 / F6 Information List (Sample)

- F5 / F6 INFORMATION LIST -				DP-1810P AAV109xxPU	P.01
F5-00	COUNTRY VERSION	USA/CAN	F5-50	AUTO EXPOSURE (T/P)	Fix
F5-01	. . . . .		F5-51	. . . . .	
F5-02	. . . . .		F5-52	. . . . .	
F5-03	LSU STARTUP SPEED	Low	F5-53	. . . . .	
F5-04	LSU OFF TIMER	30Sec	F5-54	MARGIN REDUCTION	No
F5-05	. . . . .		F5-55	MARGIN VALUE DEFAULT	10mm
F5-06	. . . . .		F5-56	EDGE VALUE DEFAULT	5mm
F5-07	. . . . .		F5-57	BOOK VALUE DEFAULT	20mm
F5-08	. . . . .		F5-58	. . . . .	
F5-09	FUSER LAMP CONTROL	No	F5-59	COPIER OPER.ADD TONER	Stop
F5-10	. . . . .		F5-60	AUTO TRAY SELECTION	Yes
F5-11	COPY RESERVATION	Yes	F5-61	. . . . .	
F5-12	. . . . .		F5-62	. . . . .	
F5-13	. . . . .		F5-63	U13 CLEAR	Any keys
F5-14	PAPER SIZE (TRAY1)	Ledger	F5-64	. . . . .	
F5-15	PAPER SIZE (TRAY2)	Ledger	F5-65	. . . . .	
F5-16	PAPER SIZE (TRAY3)	Ledger	F5-66	. . . . .	
F5-17	PAPER SIZE (TRAY4)	Ledger	F5-67	. . . . .	
F5-18	. . . . .		F5-68	. . . . .	
F5-19	. . . . .		F5-69	REDUCE N-IN-1 SPACE	No
F5-20	ADF/iADF	Auto	F5-70	PM CYCLE	120K
F5-21	. . . . .		F5-71	. . . . .	
F5-22	. . . . .		F5-72	. . . . .	

- F5 / F6 INFORMATION LIST -				DP-1810P AAV109xxPU	P.02
*F6-00	ADJ. 100% READ (S/S)	1	F6-50	T/P IMAGE DENSITY	0
*F6-01	ADJ. 100% READ (L/T)	1	F6-51	PHOTO IMAGE DENSITY	0
F6-02	ORIG. REGISTRATION	0	F6-52	. . . . .	
F6-03	REGIST. (TRAY 1)	0	F6-53	CCD READ POSITION	0
F6-04	REGIST. (BYPASS)	0	F6-54	. . . . .	
F6-05	REGIST. (TRAY 2-4)	0	F6-55	. . . . .	
F6-06	REGIST. (ADU)	0	F6-56	. . . . .	
F6-07	LEAD EDGE READ TIM.	6	F6-57	. . . . .	
F6-08	TRAIL EDGE READ TIM	0	F6-58	. . . . .	
F6-09	TRAIL EDGE PRT TIM	-6	F6-59	. . . . .	
F6-10	. . . . .		F6-60	. . . . .	
F6-11	. . . . .		F6-61	. . . . .	
F6-12	. . . . .		F6-62	. . . . .	
F6-13	. . . . .		F6-63	. . . . .	
F6-14	. . . . .		F6-64	. . . . .	
F6-15	. . . . .		F6-65	. . . . .	
F6-16	. . . . .		F6-66	. . . . .	
F6-17	. . . . .		F6-67	. . . . .	
F6-18	LASER POWER ADJ.	0	F6-68	. . . . .	
F6-19	BIAS STD VOLTAGE	0	F6-69	STAMP POSITION ADJ.	0
F6-20	HALFTONE ADJUST	0	F6-70	. . . . .	
F6-21	. . . . .		F6-71	. . . . .	
F6-22	. . . . .		F6-72	. . . . .	

### Note:

To print the List, follow the steps below.

F9 - START - 3 - START or SET - 0.

## Machine Setup Information List (Sample)

- MACHINE SETUP INFORMATION -		DP-1810P AAV109xxPU
1.FIRMWARE VERSION		
MACHINE NAME	:	DP-1810P
HOST	:	AAV109xxPU
SCANNER	:	00000
PRINTER	:	610044
PRINTER BOARD (PDL)	:	
LAN BOARD	:	
2.MEMORY CAPACITY		
PAGE MEMORY	:	16 MB
SORT MEMORY	:	8 MB
3.OPTION		
DOCUMENT FEEDER (ADF)	:	ADF
2nd PAPER FEED MODULE	:	No
LAN I/F BOARD	:	Yes (MAC ADDRESS:0800230070D3) ----- (See Remarks *1)
PDL EMULATION BOARD	:	No
4.ERROR LOG		
TOTAL PRINT COUNT	:	152
NO.	ERROR CODE	ERROR COUNT
-----		
01	J01	XX-00000008
02	J42	XX-00000140
		(See Remarks *2)
-----		

**Remarks:**

\*1:If the LAN I/F Option is installed, the MAC Address is printed.

\*2:XX-00000140

Page Count

00 : Printer Error

02 : Scanner Error

**Note:**

To print the List, follow the steps below.

F9 - START - 3 - START or SET - 1.

## F7 Total Counter List (Sample)

- F7 TOTAL COUNTER LIST -			DP-1810P AAV109xxPU	P.01
F7-01	KEY OPERATOR ID	:	0	
F7-02	TOTAL COUNT	:	155	
F7-03	PM COUNT	:	155	
F7-04	SCANNER PM COUNT	:	61	
F7-05	ADF/iADF PM COUNT	:	26	
F7-06	OPC DRUM COUNT	:	155	
F7-27	DRUM ROTATE EQUIVALENT	:	5%	
F7-07	PROCESS UNIT COUNT	:	155	
F7-08	PAPER TRANSPORT COUNT	:	0	
F7-09	ADU COUNT	:	0	
F7-10	DUAL-PATH UNIT COUNT	:	0	
F7-11	SHEET BYPASS COUNT	:	0	
F7-12	1st PAPER TRAY COUNT	:	155	
F7-13	2nd PAPER TRAY COUNT	:	0	
F7-14	3rd PAPER TRAY COUNT	:	0	
F7-15	4th PAPER TRAY COUNT	:	0	
F7-16	ADF/iADF COUNT	:	26	
F7-17	ADF/iADF READ COUNT	:	26	
F7-18	SCANNER COUNT	:	61	
F7-19	SCANNER READ COUNT	:	18	

### Note:

To print the List, follow the steps below.

F9 - START - 3 - START or SET - 2.

### 5.1.3. F4 Mode: Input/Output Check

Set the machine to service mode and press "4" on the Keypad.



Press the "START" key.



Select the Check Input or Check Output on the Control Panel.



Enter the number to activate the test then press "START" key.



Press "STOP" key to cancel the test.



When the "CLEAR" key is pressed, the selected code input will not be accepted.



Press "FUNCTION" and "CLEAR" keys simultaneously to exit the service mode.

#### 1. Input Check

F4 Mode (Input Check)											
No.	Function	Condition	Message Display								Remark
			7	6	5	4	3	2	1	0	
000	Not Used										
001	Paper Registration Sensor (4th Paper Tray)	Sensor is activated.		1							For DP-1810F/2010E
	Paper Registration Sensor (3rd Paper Tray)	Sensor is activated.			1						
	Paper Registration Sensor (2nd Paper Tray)	Sensor is activated.				1					
002	Registration Sensor	Sensor is activated.					1				For DP-1810F/2010E
	Paper Eject Sensor	Sensor is activated.						1			
	Dual-Path Exit Guide Unit Eject Sensor	Sensor is activated.							1		
006	Duplex Unit Sensor 4	Sensor is activated.				1					For DP-1810F/2010E
	Duplex Unit Sensor 3	Sensor is activated.					1				
	Duplex Unit Sensor 2	Sensor is activated.						1			
	Duplex Unit Sensor 1	Sensor is activated.							1		
007	JAM Access Cover Open Detection Sensor (4th Tray)	Cover is open.				1					For DP-1810F/2010E
	Paper Level Sensor (4th Tray)	Upper Limit is detected.					1				
	Paper Tray Sensor (4th Tray)	Paper Tray is detected.						1			
	NP Sensor (4th Tray)	Paper is detected.							1		

F4 Mode (Input Check)										
No.	Function	Condition	Message Display							
			7	6	5	4	3	2	1	0
008	JAM Access Cover Open Detection Sensor (3rd Tray)	Door is open.				1				
	Paper Level Sensor (3rd Tray)	Upper Limit is detected.					1			
	Paper Tray Sensor (3rd Tray)	Paper Tray is detected.						1		
	NP Sensor (3rd Tray)	Paper is detected.							1	
009	JAM Access Cover Open Detection Sensor (2nd Tray)	Door is closed.				1				
	Paper Level Sensor (2nd Tray)	Upper Limit is detected.					1			
	Paper Tray Sensor (2nd Tray)	Paper Tray is detected.						1		
	NP Sensor (2nd Tray)	Paper is detected.							1	
010	Paper Level Sensor (1st Tray)	Upper Limit is detected.					1			
	Paper Tray Sensor (1st Tray)	Paper Tray is detected.						1		
	NP Sensor (1st Tray)	Paper is detected.							1	
011	Sheet Bypass Paper Length	Paper is detected.				1				
	Sheet Bypass Paper Length (A3)	Paper is detected.					1			
	Sheet Bypass Paper Length (B4)	Paper is detected.						1		
	Sheet Bypass NP Sensor	Paper is detected.							1	
012	Toner Waste Container Sensor	Toner Waste Container is detected.				1				
	Front Cover Sensor	Front Cover is closed.						1		
	Micro Switch	Right Side Door is closed.						1		
013-019	Not Used									
021	Scanner Home Position	Home position is detected.								1
	ADF/Platen Cover Open Sensor	ADF/Platen Cover is open.							1	
	ADF/Platen Cover Angle Sensor	ADF/Platen Cover is open more than angle of 30°.						1		
022-029	Not Used									
030	ADF Duplex Eject Sensor	Sensor is activated.								
	ADF Read Point Sensor	Sensor is activated.							1	
	ADF Eject Sensor	Sensor is activated.						1		
	ADF Cover Open Detection Sensor	Cover is open.				1				

F4 Mode (Input Check)											
No.	Function	Condition	Message Display								Remark
			7	6	5	4	3	2	1	0	
031	ADF Original Sensor	Sensor is activated.								1	
	ADF Original Width Sensor (A4/Letter)	A4/Letter size is detected.							1		
	ADF Original Width Sensor (B4)	B4 size is detected.						1			
	ADF Original Width Sensor (A3)	A3 size is detected.					1				
	ADF Original Length Sensor 2	Sensor is activated.				1					
	ADF Original Length Sensor 1	Sensor is activated.			1						For USA and Canada
032-039	Not Used										

## 2. Output Check

Press the "START" key to start and press the "STOP" key to reset.

F4 Mode (Output Check)			
No.	Item	Function	Remark
040	Total Counter	Count up the Total Counter after pressing Start key.	
041	Key Counter	Count up the Key Counter after pressing Start key.	
042-049	Not Used		
050	Printer Motor	Activate Main Motor after pressing Start key.	
051	High Voltage Charge AC	Activate High Voltage Charge AC after pressing Start key.	
052	High Voltage Charge DC	Activate High Voltage Charge DC after pressing Start key.	
053	High Voltage Development	Activate High Voltage Development after pressing Start key.	
054	High Voltage Transfer	Activate High Voltage Transfer after pressing Start key.	
055	High Voltage Cleaning	Activate High Voltage Cleaning after pressing Start key.	
056	Fan	Activate Fan after pressing Start key.	
057	Power Supply for Fan	Activate Power Supply for Fan after pressing Start key.	
058-059	Not Used		
060	Fuser Lamp	Activate Fuser Lamp after pressing Start key.	
061	Registration Clutch	Activate Registration Clutch after pressing Start key.	
062	Polygon Motor (LSU)	Activate Polygon Motor after pressing Start key.	

<b>F4 Mode (Output Check)</b>			
<b>No.</b>	<b>Item</b>	<b>Function</b>	<b>Remark</b>
063	1st Tray Feed Roller Clutch	Activate 1st Tray Paper Drive Clutch after pressing Start key.	
064	1st Tray Lift DC Motor	Activate 1st Tray Lift DC Motor after pressing Start key.	
065	Not Used		
066	LSU Fan	Activate LSU Fan Motor after pressing Start key.	
067	Toner Bottle Motor	Activate Toner Bottle Motor after pressing Start key.	
068-069	Not Used		
070	2nd Tray Feed Roller Clutch	Activate 2nd Tray Paper Drive Clutch after pressing Start key.	
071	2nd Tray Lift DC Motor	Activate 2nd Tray Lift DC Motor after pressing Start key.	
072	2nd Intermediate Roller Clutch	Activate 2nd Idle Clutch after pressing Start key.	
073-074	Not Used		
075	3rd Tray Motor	Activate 3rd Tray Motor after pressing Start key.	For DP-1810F/2010E
076	3rd Tray Feed Roller Clutch	Activate 3rd Tray Paper Drive Clutch after pressing Start key.	
077	3rd Tray Lift DC Motor	Activate 3rd Tray Lift DC Motor after pressing Start key.	
078	3rd Intermediate Roller Clutch	Activate 3rd Idle Clutch after pressing Start key.	
079	Not Used		
080	4th Tray Feed Roller Clutch	Activate 4th Tray Paper Drive Clutch after pressing Start key.	For DP-1810F/2010E
081	4th Tray Lift DC Motor	Activate 4th Tray Lift DC Motor after pressing Start key.	
082	4th Intermediate Roller Clutch	Activate 4th Idle Clutch after pressing Start key.	
083-084	Not Used		
085	Sheet Bypass Feed Roller Clutch	Activate Sheet Bypass Clutch after pressing Start key.	
086-099	Not Used		
100	Duplex Unit Solenoid (Eject 2)	Activate Automatic Duplex Unit Solenoid (Eject 2) after pressing Start key.	For DP-2010E
101	Duplex Unit Solenoid (Eject 1)	Activate Automatic Duplex Unit Solenoid (Eject 1) after pressing Start key.	
102-119	Not Used		
120	CCD Assembly	Activate CCD Assembly after pressing Start key.	



#### 5.1.4. F5 Mode: Copier Function Parameters

Set the machine to Service Mode and press "5" on the Keypad.



Press the "START" key.



Select the desired code number on the Control Panel.



If you wish to select another code number, scroll the menu with the arrow keys (↑ ↓).



Select the desired function on the Control Panel and press the "START" key.



When the "CLEAR" key is pressed, the selected setting inputted will not be accepted.



Press the "FUNCTION" and "CLEAR" keys simultaneously to exit the Service Mode.



Reboot the machine after setting the parameter(s) to activate the setting(s).

**Note:**

If you change the Function Parameter "F5 - 00", Country version, you must also change the related Function Parameters "F5 - 80, 95, 96".

F5 Mode			
No.	Item	Function	Factory Setting
00	Country Version (See Note)	0 : Japanese 1 : North American 2 : European 3 : Other	1 (for North America) 2 (for Europe/ Other)
01-02	Not Used		
03	LSU Startup Speed	0 : Low 1 : Stop	0
04	LSU Off Timer	0 : 15 sec 1 : 30 sec 2 : 45 sec 3 : 60 sec 4 : 75 sec	1
05-08	Not Used		
09	Fuser Lamp Phase Control	0 : Zero cross control (No) 1 : Phase control (Pattern 1) 2 : Phase control (Pattern 2)	0 (for North America) 2 (for Europe/ Other)
10	Not Used		
11	Copy Reservation	0 : No 1 : Yes	1
12-13	Not Used		

F5 Mode			
No.	Item	Function	Factory Setting
14	Paper Size (Tray 1)	0 : Ledger 1 : Legal 2 : Letter 3 : Letter-R 4 : INVOICE/A5-R 5 : A3 6 : B4 7 : A4 8 : A4-R 9 : B5 10 : B5-R 11 : A5-R 12 : FLS1 13 : FLS2	0 (for North America) 5 (for Europe/ Other)
15	Paper Size (Tray 2)	Same as F5-14	Same as F5-14
16	Paper Size (Tray 3)	Same as F5-14	Same as F5-14
17	Paper Size (Tray 4)	Same as F5-14	Same as F5-14
18-19	Not Used		
20	ADF/i-ADF	0 : Off (Does not detect the option) 1 : Auto	1
21-23	Not Used		
24	ADU	0 : Off (Does not detect the option) 1 : Auto	1
25-34	Not Used		
35	Sort Mode Default	0 : Non-sort 1 : Sort	0
36-37	Not Used		
38	Duplex Mode Default	0 : No 1 : 1 to 2 2 : 2 to 2 3 : Book to 2	0 (For DP-2010E)
39	Not Used		
40	Double Count (Total Counter, Key Counter, and Electronic Counter)	0 : No 1 : Ledger/A3 2 : Ledger/Legal/A3/B4	1
41	Count Up Timing	0 : At paper feed roller clutch (and sheet bypass solenoid) 1 : At paper exit sensor	1
42	Key/Dept. Counter	0 : Not installed 1 : Key Counter Installed 2 : Departmental Counter	0
43	Key Counter Timing	Same as F5-41	0
44-49	Not Used		
50	Automatic Exposure (Tex/Photot)	0 : No 1 : Yes 2 : Fix	2
51-53	Not Used		
54	Margin Reduction	0 : No 1 : Yes	0

F5 Mode			
No.	Item	Function	Factory Setting
55	Margin Value Default	0 : 5mm 1 : 10mm 2 : 15mm 3 : 20mm	1
56	Edge Value Default	0 : 5mm 1 : 10mm 2 : 15mm 3 : 20mm	0
57	Book Value Default	0 : 5mm 1 : 10mm 2 : 15mm 3 : 20mm	1
58	Not Used		
59	Copier Operation U13 (After "U13" Toner Box empty detection)	0 : Stop (Copier stops or copy cycle is inhibited). 1 : Continue (Continuous copier operation)	0
60	Auto Tray Selection	0 : No (Manual) 1 : Yes (Auto)	1
61-62	Not Used		
63	U13 Clear=After toner empty detection (Copier stops or copy cycle inhibited)	0 : Any keys (When clearing U13, press any key.) 1 : User key (Press FUNCTION key and digit key 1.)	0
64-68	Not Used		
69	Reduce N-in-1 Space	0 : No 1 : Yes	0
70	PM (Preventive Maintenance)	0 : No 1 : 1.5K 2 : 2.5K 3 : 5K 4 : 10K 5 : 15K 6 : 20K 7 : 30K 8 : 40K 9 : 60K 10 : 80K 11 : 90K 12 : 120K 13 : 160K	12
71	Not Used		
72	Not Used		
73	PM (OPC Drum) (Preventive Maintenance for OPC Drum)	0 : No (No indication) 1 : Service 2 : User	1
74	PM (Process Unit) (Preventive Maintenance for Process Unit)	0 : No (No indication) 1 : Service 2 : User	1
75	Not Used		

F5 Mode			
No.	Item	Function	Factory Setting
76	Automatic Exposure (Text)	0 : No 1 : Yes 2 : Fix	2
77	Text Error Diffusion	0 : Off 1 : On (Execute error diffusion on Text mode.)	1
78	A4/LTR Size Select	0 : No 1 : Yes (Set paper side to A4/LTR if original is less than A4/LTR.)	0
79	Not Used		
80	Paper Size Priority (See Note)	0 : Ledger 1 : Legal 2 : Letter 3 : Letter-R 4 : INVOICE 5 : A3 6 : B4 (B4/FLS1/FLS2) 7 : A4 8 : A4-R 9 : B5 10 : B5-R 11 : A5 12 : A5-R	2 (for North American)  6 (Selectable by No. 81)  7 (for European/ Other)
81	B4/Foolscap Size (for European version)	0 : B4 1 : Foolscap 1 (13" x 8") 2 : Foolscap 2 (13" x 8.5")	0
82	Manual Skyshot Mode	0 : Off1 : M1 On 2 : M2 On3 : M1, M2 On	0
83	Digital Skyshot	0 : No 1 : Normal 2 : Quality	1
84	Paper Tray Priority (Left to Right)	0 : System (lower to upper) > Sheet Bypass 1 : Copier (upper to lower) > Sheet Bypass	1
85	Not Used		
86	PM (Scanner)	0 : No 1 : 40K 2 : 60K 3 : 120K 4 : 240K 5 : 360K 6 : 480K 7 : 600K	0
87	PM (ADF/i-ADF)	0 : No 1 : 40K 2 : 60K 3 : 120K 4 : 240K 5 : 360K 6 : 480K 7 : 600K	0

F5 Mode			
No.	Item	Function	Factory Setting
88-89	Not Used		
90	Beep Sound	0 : Off 1 : Soft 2 : Loud	1
91	M1, Size Y	Set the default size for Manual Skyshot Mode, M1 and M2.	160
92	M1, Size X		70
93	M2, Size Y		220
94	M2, Size X		95
95	Paper Size (FA) <b>(Factory use only)</b> (See Note)	0 : Japanese 1 : North American 2 : European 3 : Other	-
96	Bypass Size (FA) <b>(Factory use only)</b> (See Note)	0 : Japanese 1 : North American 2 : European 3 : Other	-
97	Not Used		
98	Bypass B4/FLS (FA) <b>(Factory use only)</b>	0 : B4 1 : Foolscap 1 (13" x 8") 2 : Foolscap 2 (13" x 8.5")	0
99	Not Used		

**Note:**

If you change the Function Parameter "F5 - 00", Country version, you must also change the related Function Parameters "F5 - 80, 95, 96".

Related Function Parameters

No.	Country Version	
	North American	European
00	1	2
80	2	7
95	1	2
96	1	2

### 5.1.5. F6 Mode: Adjustment and Programming

Set the machine to Service Mode and press "6" on the Keypad.



Press the "START" key.



Select the desired code number on the Control Panel.



If you wish to select another code number, scroll the menu with the arrow keys (↑ ↓).



Select the desired function on the Control Panel and press the "START" key.



When the "CANCEL" key is pressed, the selected setting inputted will not be accepted.



Press the "FUNCTION" and "CLEAR" keys simultaneously to exit the Service Mode.



Reboot the machine after setting the parameter(s) to activate the setting(s).

F6 Mode			
No.	Item	Function	Setting
00	Main-scan direction magnification ratio (vertical position to the paper feed direction) (standard = 100%)	Adjustment of ratio for vertical position when scan is made. (+) : Increase. (-) : Decrease.	-9 - +9 0.1%
01	Sub-scan direction magnification ratio (parallel position to the paper feed direction)	Adjustment of ratio for parallel position when scan is made. (+) : Increase. (-) : Decrease.	-9 - +9 0.1%
02	Platen original registration detecting timing	Adjustment of platen original registration detection timing. (+) : More delay. (-) : Less delay.	-30 - +30 0.2mm
03	Copy paper registration detecting timing (1st Tray)	Delay time is adjusted from registration roller clutch ON. (+) : More delay. (-) : Less delay.	-30 - +30 0.25mm
04	Copy paper registration detecting timing (Sheet Bypass)	Delay time is adjusted from registration roller clutch ON. (+) : More delay. (-) : Less delay.	-30 - +30 0.25mm
05	Copy paper registration detecting timing (2nd Tray)	Delay time is adjusted from registration roller clutch ON. (+) : More delay. (-) : Less delay.	-30 - +30 0.25mm
06	Copy paper registration detecting timing (Auto. Duplex Unit)	Delay time is adjusted from registration roller clutch ON. (+) : More delay. (-) : Less delay.	-30 - +30 0.25mm
07	Registration void of image	Registration void should be adjusted. (+) : Increase. (-) : Decrease.	0 - +99 0.425mm

F6 Mode			
No.	Item	Function	Setting
08	Trail edge detection timing of the original image	Adjustment of trail edge void. (-) : Decrease.	-9 - 0 0.5mm
09	Trail edge detection timing of the copy image	Adjustment of trail edge void. (+) : Increase. (-) : Decrease.	-9 - +15 0.425mm
10-17	Not Used		
18	Laser power compensation	Laser power compensation adjustment. (+) : Increase. (-) : Decrease.	-127 - 127
19	Bias standard voltage	Adjustment of bias standard voltage. (+) : Increase. (-) : Decrease.	-127 - 127 2.28V
20	Halftone Adjust	Halftone adjustment, Print density for Photo Mode. (-) : Darker. (+) : Lighter.	-8 - +7
21-30	Not Used		
31	Fuser Temperature	Adjustment of fuser temperature. (+) : Increase. (-) : Decrease.	-15 - +15 0.7°C
32-38	Not Used		
39	LSU Unit PWM	Adjustment of PWM value of LSU. (+) : Darker. (-) : Lighter.	-32 - +32
40	Not Used		
41	Paper Loop (1st Tray)	Adjustment for the length of the loop formed before the copier timing roller. (+) : Increase. (-) : Decrease.	-8 - +7 0.5mm
42	Paper Loop (Sheet Bypass)	Adjustment for the length of the loop formed before the copier timing roller. (+) : Increase. (-) : Decrease.	-8 - +7 0.5mm
43	Paper Loop (2nd Tray)	Adjustment for the length of the loop formed before the copier timing roller. (+) : Increase. (-) : Decrease.	-8 - +7 0.5mm
44	Paper Loop (Auto. Duplex Unit)	Adjustment for the length of the loop formed before the copier timing roller. (+) : Increase. (-) : Decrease.	-8 - +7 0.5mm
45-48	Not Used		
49	Text Mode Image Density	Image density adjustment for Text mode. (-) : Darker. (+) : Lighter.	-99 - +99
50	Text/Photo Mode Image Density	Image density adjustment for Text/ Photo mode. (-) : Darker. (+) : Lighter.	-99 - +99

F6 Mode			
No.	Item	Function	Setting
51	Photo Mode Image Density	Image density adjustment for Photo mode. (-) : Darker. (+) : Lighter.	-99 - +99
52	Not Used		
53	CCD Read Timing	Adjustment of CCD read position. (+) : More delay. (-) : Less delay.	-44 - +44 0.2mm
54-68	Not Used		
69	Stamp Position Adjustment	Adjustment of verification stamp position. (+) : More delay. (-) : Less delay.	-7 - +7 0.5mm
70-78	Not Used		
79	MTF Adjustment	Adjustment of MTF. (+) : Darken edge. (-) : Lighten edge.	-127 - +127
80-82	Not Used		
83	Laser Unit Image Side (Sheet Bypass)	Laser write start position adjustment (side to side adjustment). (+) : More delay. (-) : Less delay.	-8 - +7 0.5mm
84	Laser Unit Image Side (1st Tray)		
85	Laser Unit Image Side (2nd Tray)		
86	Laser Unit Image Side (3rd Tray)		
87	Laser Unit Image Side (4th Tray)		
88	Not Used		
89	Laser Unit Image Side (Auto. Duplex Unit)	Laser write start position adjustment (side to side adjustment). (+) : More delay. (-) : Less delay.	-8 - +7 0.5mm
90	ADF Image Read Start	Adjustment of ADF horizontal image read start position. (+) : More delay. (-) : Less delay.	-50 - +9 0.2mm
91	ADF Original Lead Edge Registration	Adjustment of original detection timing. (+) : More delay. (-) : Less delay.	-99 - +99 0.2mm
92	Not Used		
93	ADF Original Trail Edge	Adjustment of original trail edge detection. (+) : More delay. (-) : Less delay.	-127 - 127 0.2mm
94	ADF Magnification Ratio (Top Feed)	Adjustment of ratio when the scan is made. (+) : Increase. (-) : Decrease.	-9 - +9 0.1%
95-98	Not Used		
99	All F6 Parameters Initialize	Initialize All F6 Parameters	-



### 5.1.6. F7 Mode: Electronic Counter

Set the machine to Service Mode and press "7" on the Keypad.



Press the "START" key.



Select the desired code number on the Control Panel.



If you wish to select another code number, scroll the menu with the arrow keys (↑ ↓).



Select the desired function on the Control Panel and press the "START" key.



When the "CLEAR" key is pressed, the selected setting inputted will not be accepted.



Press the "FUNCTION" and "CLEAR" keys simultaneously to exit the Service Mode.

F7 Mode						
Service Mode	Item				Function	
F7	Electronic Counter	00	Not Used			
		01	Key Operator ID			Key Operator's identification code for access to the counter mode.
		Maintenance Count	02	Total Count		Total count for all copies / prints.
			03	PM Count		Preventive Maintenance count.
			04	Scanner PM Count		PM count for scanner read.
			05	ADF/i-ADF PM Count		PM count for originals fed.
			06	OPC Drum Count		PM count for OPC Drum paper fed.
			27	Drum Rotate Equivalent		PM count for OPC Drum Round Time.
			07	Process Unit Count		PM count for Process Unit paper fed.
			08	Paper Transport Count		PM count for Paper Transport Unit paper fed.
		Paper Feed Count	11	Sheet Bypass Count		Total count of paper fed from the sheet bypass.
			12	1st Paper Tray Count		Total count of paper fed from the 1st paper tray.
			13	2nd Paper Tray Count		Total count of paper fed from the 2nd paper tray.
			14	3rd Paper Tray Count		Total count of paper fed from the 3rd paper tray.
			15	4th Paper Tray Count		Total count of paper fed from the 4th paper tray.
		Scanner Count	16	ADF/i-ADF Count		Total count of originals fed through the ADF/i-ADF.
			17	ADF/i-ADF Read Count		Total count of originals scanned through the ADF/i-ADF.
			18	Scanner Count		Total count of scanning operations.
			19	Scanner Read Count		Total count of scanner read.

F7 Mode					
Service Mode	Item			Function	
F7	Electronic Counter	Copy Count	20	Copy Print Count	Total count of copies printed.
			21	Copy Scan Count	Total count of copies scanned.
		PC Count	22	PC Print Count	Total count printed from PC.
			23	PC Scan Count	Total count scanned to PC.
		Fax Count	24	Fax Transmit Count	Total count of Fax transmitted.
			25	Fax Receive Count	Total count of Fax received.
			26	Fax Print Count	Total count of Fax printed.
		99	Clear All Counts		All counters are cleared.

### 5.1.7. F8 Mode: Copier Operation Adjustment

Set the machine to Service Mode and press "8" on the Keypad.



Press the "START" key.



Select the desired code number on the Control Panel.



If you wish to select another code number, scroll the menu with the arrow keys (↑ ↓).



Select the desired function on the Control Panel and press the "START" key.



When the "CANCEL" key is pressed, the selected setting inputted will not be accepted.



Press the "FUNCTION" and "CLEAR" keys simultaneously to exit the Service Mode.

F8 Mode		
No.	Item	Function
00	Check Mirror Movement	When replacing the exposure lamp. Procedure: a) Press the START key to move the exposure lamp to the position (approx. 250 mm from the optics home position) where it can be replaced. b) To return the optical system to the home position, press the STOP key.*
01-05	Not Used	
06	Error Log Print/View	a) Each time the arrow key is pressed, the machine errors or paper jam codes stored in memory are displayed, beginning with the oldest code. <b>Note:</b> Only the 30 most recent codes are displayed.
07	Error Log Clear	a) Press the Reset key. A Message "Error code can be cleared with the Start key" is displayed on the LCD.* b) Press the Start key.
08-11	Not Used	
13-18	Not Used	
19	Lock Operation of Mirror and Lens (Field Use only)	a) Press the Start key then the mirror unit moves to locked position for transporting the copier. b) When the mirror unit is locked, any digit key input is not be accepted. <b>Note:</b> The lock operation is automatically reset when the Power switch is turned ON again.
20-46	Not Used	
47	ADF Continuous Scanning Test	Press START key to begin.
48	Book Scan Test	Press START key to begin.
49-54	Not Used	

### 5.1.8. F9 Mode: System Maintenance

Set the machine to Service Mode and press "9" on the Keypad.



Press the "START" key.



Select the desired code number on the Control Panel.



If you wish to select another code number, scroll the menu with the arrow keys (↑ ↓).



Select the desired function on the Control Panel and press the "START" key.



When the "CANCEL" key is pressed, the selected setting inputted will not be accepted.



Press the "FUNCTION" and "CLEAR" keys simultaneously to exit the Service Mode.

F9 Mode						
Service Mode	Item				Function	
F9	Unit Maintenance	00	Fax Function Parameters			
		01	Service Alert Tel #			Displays the contact number when a machine malfunction occurs.
		02	Firmware Version	00	Host	Displays the firmware version for host.
				02	Scanner	Displays the firmware version for scanner.
				03	Printer	Displays the firmware version for printer.
				05	Printer Board (PDL)	Displays the firmware version for PDL.
				06	LAN Board	Displays the firmware version for LAN.
		03	Print Device Info.	00	F5/F6 Parameters	Prints the memory contents of the F5 and F6 modes.
				01	Machine Info.	Prints the printer report.
				02	Counter Information	Prints the counter information.
				03	System Addr. Info.	Prints the system memory setting.
				04	RAM Addr. Info.	Prints the RAM data dump list.
		04	RAM Edit Mode			<b>Factory use only.</b>
		05	Not Used			
		06	RAM Initialize	00	Parameter Initialize	Resets the Fax and Function parameters to default values.
				01	All Job Clear	Clears all Jobs stored in Flash Memory.
				02	LBP Error Log Clear	Clears the Printer Error Log.
				03	Shipment Set	Clears All Jobs, All Preset Data, Parameter Initialize & Resets the Counters.
				04	LBP Fuser Reset	Clears the LBP fuser error.

F9 Mode							
Service Mode	Item					Function	
F9	Unit Maintenance	07	Firmware Update	00	Host Program (4MB)	Updates the firmware in the machine with the Master Firmware Card.	
				01	Host Part A (2MB)		
				02	Host Part B (2MB)		
				03	PDL Board (2MB)		
				04	LAN Board (2MB)		
				05	PC → Host Program (4MB)		
		08	Firmware Backup	00	Host Program (4MB)	Creates a Backup Firmware Card of the machine's firmware.	
				01	Host Part A (2MB)		
				02	Host Part B (2MB)		
		09	PC → Flash Card				Creates a Master Firmware Card using the Firmware Update Kit. A 2MB or 4MB Flash Memory Card will be required depending upon the model.
		10	Page Memory Size				Displays the page memory size (MB).
		11	Sort Memory Size				Displays the sort memory size (MB).

## 5.2. Service Modes (For Facsimile)

### Note:

This function is available for DP-1810F Only.

### 5.2.1. Service Mode Table

The following service modes are provided to assist you in setting operational functions of the unit and determining the condition of the unit.

No.	Service Mode	Description
1	Function Parameter Setting	Allows changes to the function parameters (the home position, etc.).
2	RAM Edit Mode	<b>Factory use only.</b>
3	Print Parameter List / Reports	Prints the Function Parameter List, Page Memory Test, Printer Report, All Document File, Protocol Trace and Toner Order Form.
4	Modem Tests	Generates various binary, tonal and DTMF signals, by the modem.
5	Not Used	
6	RAM Initialization	Initialize RAM and restore the default value of the function parameters.
7	Not Used	
8	Check & Call	Allows input of information for Service Alert Report, Maintenance Alert Report and Toner Order Form.
9	System Maintenance	Used for Firmware Update, Firmware Backup, Parameter Restore, Parameter Backup, Transferring Firmware from the PC to the Flash Card and Sending a Received File during a fatal printer error.
10	Firmware Version	Display the Firmware Version of Host, Scanner, Printer and Modem.

### 5.2.2. Service Mode 1 (Function Parameter Setting)

Use the following procedure to change the function parameters.

Service Mode 1 : For DP-1810F		
Step	Operation or Unit Condition	LCD Display
1	Standby	MMM-dd-yyyy 15:00 00%
2	Press "FUNCTION" and then "7".	SET MODE (1-4) ENTER NO. OR V Δ
3	Press "MONITOR" four times, then press "**".	SERVICE MODE ENTER NO. OR V Δ
4	Press "1".	PARAMETER (000-299) ENTER PARAMETER #_
5	Enter the Function Parameter Number or press "V" or "Δ" to select the desired parameter. Ex: Changing the "ALARM STATUS" -- Enter "001" and press [SET].	PARAMETER #001 ALARM STATUS?
6	Press "START".	ALARM STATUS:Timer 1:OFF 2:Tmr 3:CONST
7	Enter the new setting value. Ex: Enter "3" for Constant.	ALARM STATUS:Const. 1:OFF 2:Tmr 3:CONST
8	Press "START". The new value will be stored and the next parameter will be displayed.	PARAMETER #002 STOP COMM.JRNL?
9	Repeat steps 4 through 7 to change other Function Parameters or Press "STOP" twice to return to standby.	MMM-dd-yyyy 15:00 00%

**Note:**

The following buttons provide these functions in the Service Mode:

- "START": : The new setting value is stored in the machine.
- "V" : Scroll the function parameter number down.
- "Δ" : Scroll the function parameter number up.

Function Parameter Table

No.	Parameter	Selections	Function
000	MON/TEL DIAL	1 = Monitor 2 = TEL/DIAL	Selects whether the machine starts to TX automatically during On-Hook dialing. <b>Monitor</b> : Start to TX after pressing START <b>TEL/DIAL</b> : Start to TX automatically
001	ALARM STATUS	1 = OFF 2 = Timer (6 sec.) 3 = Constant	Selects the No Paper or No Toner alarm status. <b>OFF</b> : Alarm is disabled. <b>Timer</b> : Alarm will shut off after 6 seconds. <b>Constant</b> : Alarm will not stop until "STOP" is pressed or the error is cleared/ corrected.
002	STOP COMM. JRNL	1 = Off 2 = On	Selects whether the machine prompts to print the COMM. Journal when the printout condition is set to INC and STOP is pressed during communication.
003	CONTINUOUS POLL	1 = Off 2 = Stn (Tx only) 3 = Hub (Rx only)	Selects whether the Continuous Polling feature is enabled. <b>Stn</b> : Place the document(s) on the ADF or Platen, then press the assigned Program Key to store or add the documents into a polled file. (See Note 1) <b>Hub</b> : When the polling command is initiated, the machine will continuously poll originals from the remote stations until it is interrupted by pressing "STOP".
004	NUMERIC ID SET	1 = Off (will not accept) 2 = On (accepts)	Selects whether the machine accepts and allows to set or change the Numeric ID.
005	Not Used		
006	ID DISPLAY	1 = Number (Numeric ID) 2 = Chara (Character ID)	Selects the priority of displaying the ID.
007	JNL COLUMN	1 = Preset station name 2 = Received ID	Selects the contents of the ID to display on the Journal.
008	MONITOR	1 = Off 2 = On	Selects whether the Monitor is ON/OFF for monitoring fax signals. <b>(FOR SERVICE USE ONLY)</b>
009	DC LOOP	1 = Off (Normal) 2 = On (Off Hook)	Selects a false Off Hook state for back to back communication test.
010	TX LEVEL	00 = 0 dBm ~ 15 = -15 dBm	Selects the TX signal output level, 0 to -15 dBm in 1 dBm steps. (Refer to Chapter 4.3.)
011	RX LEVEL	1 = -43 dBm 2 = -38 dBm 3 = -33 dBm 4 = -48 dBm	Selects the receiving sensitivity of -33/-38/-43/-48 dBm.
012	DTMF LEVEL	00 = 0 dBm ~ 15 = -15 dBm	Selects the DTMF output level, 0 to -15 dBm in 1 dBm steps.
013	G3 RX EQL	1 = 0dB 2 = 4dB 3 = 8dB 4 = 12dB	Selects the cable equalizer for G3 reception mode, 0dB, 4dB, 8dB or 12dB.



Function Parameter Table			
No.	Parameter	Selections	Function
014	G3 TX EQL	1 = 0dB 2 = 4dB 3 = 8dB 4 = 12dB	Selects the cable equalizer for G3 transmission mode, 0dB, 4dB, 8dB or 12dB.
015 ~ 016	Not Used		
017	TX START	1 = 2400 bps 2 = 4800 bps 3 = 7200 bps 4 = 9600 bps 5 = TC7200 bps 6 = TC9600 bps 7 = 12000 bps 8 = 14400 bps	Selects the transmission modem start speed, 14400/12000/TC9600/TC7200/9600/7200/4800/2400 bps. <b>Note:</b> This parameter is applicable only when communicating with regular G3 machines. When communicating with Super G3 (V.34) machines, use Parameter No. 32.
018	RX START	1 = 2400 bps 2 = 4800 bps 3 = 7200 bps 4 = 9600 bps 5 = TC7200 bps 6 = TC9600 bps 7 = 12000 bps 8 = 14400 bps	Selects the reception modem start speed, 14400/12000/TC9600/TC7200/9600/7200/4800/2400 bps. <b>Note:</b> This parameter is applicable only when communicating with regular G3 machines. When communicating with Super G3 (V.34) machines, use Parameter No. 33.
019	ITU-T V.34	1 = Off 2 = On 3 = Select	Selects whether the ITU-T V.34 is Off, On or Select. <b>Select:</b> Select whether the ITU-T V.34 is Off or On, when entering Phone Book Dialing Numbers or Manual Number Dialing.
020	ITU-T ECM	1 = Off (Invalid) 2 = On (Valid)	Select the ECM mode.
021	EP TONE	1 = Off (without EP Tone) 2 = On (with EP Tone)	Selects whether to add the echo protect tone on V.29 mode. (Used when Echo Suppression is disabled.) <b>On</b> : Add <b>Off</b> : Do not add
022	SIGNAL INTERVAL	1 = 100 ms 2 = 200 ms 3 = 500 ms	Selects the time interval between the receiving signal and the transmitting signal.
023	TCF CHECK	1 = Normal (Short) 2 = Long	Selects the TCF check interval Long/Short
024	CED FREQUENCY	1 = 1080 Hz (non ITU-T) 2 = 2100 Hz	Selects the CED frequency 2100/1080 Hz
025	COMM. START-UP	1 = 1'st response 2 = 2'nd response	Selects the communication start-up condition (XMT and Polling). (Used when Echo Suppression is disabled.)
026	NON-STANDARD	1 = Off (Invalid) 2 = On (Valid)	Selects own mode (Panafax mode).
027	SHORT PROTOCOL B	1 = Off (Invalid) 2 = On (Valid)	Selects the short protocol mode.
028	SHORT PROTOCOL D	1 = Off (Invalid) 2 = On (Valid)	Selects the short protocol mode. When activated, it allows the machine to automatically store the modem speed for each Auto Dial Number.

Function Parameter Table			
No.	Parameter	Selections	Function
029	REMOTE DIAGNOSTICS	1 = Off (will not accept) 2 = On (accepts)	Selects whether the machine accepts Remote Diagnostics from the service station.
030	CED & 300 bps	1 = 75 ms 2 = 1 sec	Selects the pause interval between the CED and the 300 bps signal. (Used when Echo Suppression is disabled.)
031	RTC = EOLx12	1 = Off (EOLx6) 2 = On (EOLx12)	Selects the RTC signal, EOLx6 or EOLx12.
032	V34 TX START	2400-33600bps	Selects the transmission modem start speed for V.34 communication, 33600-2400 bps.
033	V34 RX START	2400-33600bps	Selects the receiving modem start speed for V.34 communication, 33600-2400 bps.
034	V34 TX Symbol Rate	2400-3429sr	Selects the transmission symbol rate for V.34, 3429/ 3200/3000/2800/2400 sr. Press "V" or "Λ" to select the symbol rate.
035	V34 RX Symbol Rate	2400-3429sr	Selects receiving symbol rate for V.34, 3429/3429/ 3200/3000/2800/2400 sr. Press "V" or "Λ" to select the symbol rate.
036	Not Used		
037	PROTOCOL DISPLAY	1 = Off (not displayed) 2 = On (displayed)	Selects whether to display the modem speed during communication. (Press the Job Status Key to display)
038	Not Used		
039	FLASH TIME	5 = 50 ms ~ 100 = 1000 ms	Selects the pause interval before activating the Flash key.
040	E/F TIME (For Germany, Austria and Switzerland only)	5 = 50 ms ~ 100 = 1000 ms	Selects the pause interval before activating the Flash key.
041	PAUSE TIME	1 = 1 sec. ~ 10 = 10 sec.	Selects the pause interval from 1 sec. ~ 10 sec. for dialing through a switchboard or for international calls.
042	Not Used		
043	REDIAL INTERVAL	0 = no waiting ~ 15 = 15 minutes	Selects the redial interval from 0 to 15 minutes in 1 minute steps.
044	REDIAL COUNT	0 = no redial ~ 15 = 15 times	Selects the redial count from 0 to 15 times in 1 step intervals. <b>Note:</b> In order to comply with the requirements TBR21 in the EC countries, do not select 15 times.
045	RING DETECT COUNT	1 = 1 ring ~ 9 = 9 rings	Selects the ring detection count from 1 to 9 rings in 1 ring step intervals.
046	ON-HOOK TIME	0 = 0 sec. ~ 90 = 90 sec.	Selects the on-hook time between sequential communication calls in 1 second step intervals.
047	RESPONSE WAIT	1 = 1 sec. ~ 90 = 90 sec.	Selects the waiting interval for the response after completing the dialing.

Function Parameter Table			
No.	Parameter	Selections	Function
048 049	Not Used		
050	RING DETECT MODE	1 = Normal 2 = Rough	Selects the quality of ringer detection. Use if the line signal is out of regulation, set to "Rough" so that the unit may detect the ringing signals.
051	Not Used		
052	PULSE RATE	1 = 10 pps 2 = 20 pps	Selects the dial pulse rate 10/20 pps.
053 054	Not Used		
055	BUSY TONE CHECK	1 = Off 2 = On	Selects whether to detect the Busy Tone.
056	DIAL TONE CHECK (Except for USA and Canada)	1 = Off 2 = On	Selects whether to detect dial tone before dialing the telephone number.
057	DC LOOP CHECK (Except for USA and Canada)	1 = Off (will not check) 2 = On (checks)	Selects whether the unit checks the DC Loop during communication.
058	COMM.JRNL +IMAGE	1 = Off (without image) 2 = On (with image)	Selects whether the machine prints the COMM. Journal with image.
059	CONFIDENTIAL RCV REPORT	1 = Off (does not print out) 2 = On (prints out)	Selects whether the machine prints the Confidential RCV Report.
060	VERSION	Indicates the Host software version.	
061	TX/RX//PRT/ CPY COUNTER	TX/RX/PRT/CPY	Displays the transmitted, received, total printed and copied document count.
062	PRINT COUNTER	1 = Off 2 = On	Selects whether to print in the Fax Parameter List, the counter information that is displayed in the Function Parameter No. 61.
063 ~ 067	Not Used		
068	NYSE FAX FORWARD (USA and Canada Only)	1 = Off 2 = On	Selects whether the machine will forward the incoming and outgoing faxes to a specified station. <b>Note:</b> Once this parameter is activated, Fax Forwarding via Fax Parameter 054 is automatically disabled, an Access Code of "0000" is automatically assigned and Fax Parameter 038 has a new setting added called "NYSE".
069	NYSE LOCAL PRINT (USA and Canada Only)	1 = INC 2 = ON (Always)	Selects the printing condition for the incoming faxes after FAX Forwarding. <b>INC.</b> : Prints only if FAX Forwarding fails. <b>ON</b> : Always prints.

Function Parameter Table			
No.	Parameter	Selections	Function
070	LINE ERROR	1 = 128 lines 2 = 256 lines 3 = 512 lines 4 = 1024 lines 5 = 2048 lines 6 = Off (will not disconnect line)	1. Selects the line disconnect condition during reception. If the number of line errors exceed this setting, the unit will disconnect the line. 2. Selects the transmit condition of RTP/PIP or RTN/PIN. (Available if No.73 Error Detect is set to "LINES") (See Note 1)
071	TOTAL ERROR	1 = 5% 2 = 10% 3 = 15% 4 = 20%	Selects the transmit condition of RTP/PIP or RTN/PIN. (Available if No.73 Error Detect is set to "RATE".) (See Note 2)
072	CONTINUOUS ERROR	1 = Off (unlimited) 2 = 3 lines/STD 3 = 6 lines/STD 4 = 12 lines/STD	Selects the continuous total error criteria of Off/3/6 or 12 lines in Standard mode. If continuous total error exceeds this setting, the unit will transmit RTN/PIN. (Available if No.73 Error Detect is set to "RATE".)
073	ERROR DETECT	1 = Lines 2 = Rate	Selects the error detect condition Lines/Rate.
074	RTN RECEIVE	1 = Disconnect 2 = Continue	Selects whether to disconnect the phone line or continue when "RTN" is received.
075	CODING	1 = MH (MH only) 2 = MR (MH or MR) 3 = MMR (MH or MR or MMR) 4 = JBIG	Selects the coding scheme.
076	BATCH TX (USA and Canada Only)	1 = Off 2 = On	Selects whether the batch transmission is available.
077	RX JAM LENGTH	1 = Off (unlimited) 2 = 2 m 3 = 8 m	Selects the maximum length of a received document that can be printed.
078 079	Not Used		
080	ORIG. TOP FEED	-5.0 mm ~ +5.0 mm	Adjusts the distance between the scanning sensor ON position and the scanning start position.
081	ORIG. END FEED	-5.0 mm ~ +5.0 mm	Adjusts the distance between the scanning sensor OFF position and the scanning end position.
082	JAM LENGTH	1 = 1 m 2 = 2 m 3 = 8 m 4 = Unlimited	Selects the maximum length of the original that can be scanned.
083	Not Used		
084	LINE AS NO PAPER	1 = Ring (ring) 2 = Busy (keep line busy)	Selects whether to ring or send a busy tone to the remote station when the recording paper runs out or the unit cannot receive because of any trouble.
085	Not Used		
086	REDUCTION FINE	1 = Off 2 = On	Selects whether the resolution is preset to Fine, when sending with reduction B4→A4.

Function Parameter Table			
No.	Parameter	Selections	Function
087	DARKER LEVEL	0 = Lightest Contrast ~ 15 = Darkest Contrast	Selects the contrast level. 0← →15 Lightest← →Darkest
088	NORMAL LEVEL		
089	LIGHTER LEVEL		
090 091	Not Used		
092	SMOOTHING	1 = Off 2 = On	Selects whether the smoothing function is available.
093 ~ 109	Not Used		
110	MAC ADDRESS		Indicates the MAC Address.
111	LAN I/F ROM VER		Indicates the LAN I/F Firmware version.
112	INSERT EMAIL TXT	1 = Off 2 = On	Selects whether the Text Template (email message) is programmable and added on all email sent in the message body above the top line of text. (Up to 40 characters Programmed in the User Parameters.) <b>Note:</b> After enabling this feature, aside from entering the text in the User Parameters, it also has to be activated in each Auto Dial Number before it will take effect. It does not work for Direct Dialed Numbers.
113	Not Used		
114	SYMBOL SET	1 = Standard 2 = Extended	Selects whether the extended symbols other than "%" is available for Internet Parameters entry.
115	TIME ZONE	1 = Scroll 2 = Direct	Selects the setting method for Time Zone. <b>Scroll</b> : Allows using "Scroll Keys" to scroll through the Time Zone Table. <b>Direct</b> : Allows you to input the Time Zone directly, (*) key to be used as a switch between +/-.
116	OVERWRITE WARNING	1 = Yes 2 = No	Selects whether the Overwrite Warning is included on the Internet FAX Result Receipt when programming the Auto Dialer via email.
117 ~ 129	Not Used		
130	BUSY-ACK TIMING	• In Busy • After Busy • While Busy	Selects the signal timing between the BUSY and ACK signal in Printer Interface Mode.
131	CMD RCV GRD TIMER	1 min. ~ 15 min.	Selects the Guard Timer between each GDI Command in Printer Interface Mode.
132	PRT DATA TIMER	1 min. ~ 15 min.	Selects the Guard Timer between each GDI Data Frame in Printer Interface Mode.
133 ~ 134	Not Used		

Function Parameter Table			
No.	Parameter	Selections	Function
135	JOB END TIMER	1 sec. ~ 999 sec.	Selects the Guard Timer while printing data with the PDL Printer Driver ver. 6.
136 ~ 159	Not Used		
160	VERSION	Indicates the ROM version on the FRM PC Board.	PDL Firmware version
161 ~ 199	Not Used		

**Note 1:** Continuous Polling (Station Mode)

This feature allows you to store or add documents into a polled file in memory.

To enable the Continuous Polling feature set Function Parameter No. 003 to "2:Station". The last Program Key will be assigned with the "Store 4 Poll" Key name automatically and cannot be changed.

To prepare the document(s) to be polled, simply place the document(s) on the ADF or Platen and then press the Program Key to store or add the document(s) into a polled file.

(Note: If a regular polled file is stored in memory, the Program Key for Continuous Polling will not be accepted.)

**Note 2:** Function Parameter No. 070 (Line Error)-Transmit condition of RTP/PIP or RTN/PIN

Signal	Setting					
	1:128	2:256	3:512	4:1024	5:2048	6:Off
MCF/PIP	0-31	0-63	0-127	0-255	0-511	Always
RTP/PIP	32-63	64-127	128-255	256-511	512-1023	-
RTN/PIN	64-127	128-255	256-511	512-1023	1024-2047	-

**Note 3:** Function Parameter No. 071 (Total Error)-Transmit condition of RTP/PIP or RTN/PIN

Signal	Setting			
	1:5%	2:10%	3:15%	4:20%
MCF/PIP	0-2	0-4	0-7	0-9
RTP/PIP	3-4	5-9	8-14	10-19
RTN/PIN	5-	10-	15-	20-

**Note 4:** The default setting of parameters depends on the country's specifications or regulations. Print the Function Parameter List to confirm the default settings.

### 5.2.3. Service Mode 3 (Printout of Lists, Reports and Test Results)

From this Service Mode you can print the Function Parameter List, Page Memory Test, Printer Report, All Document File, Protocol Trace and the Toner Order Form.

#### 5.2.3.1. Function Parameter List

A list of all Function Parameters can be printed by the following procedure.

Service Mode 3 for DP-1810F - Function Parameter List		
Step	Operation or Unit Condition	LCD Display
1	Standby	MMM-dd-yyyy 15:00 00%
2	Press "FUNCTION" and then "7".	SET MODE (1-4) ENTER NO. OR V $\Delta$
3	Press "MONITOR" four times, then press "**".	SERVICE MODE ENTER NO. OR V $\Delta$
4	Press "3". Use "V" or " $\Delta$ " to scroll to the desired printout.	PRINTOUT (1-7) 1:FUNC. PARAM. LIST
5	Press "START".	* PRINTING * FUNC. PARAMETER LIST
6	After printing is completed, the unit returns to the display in step 3.	SERVICE MODE ENTER NO. OR V $\Delta$
7	Press "STOP" to return to standby.	MMM-dd-yyyy 15:00 00%

# Function Parameter List (Sample)

\*\*\*\*\* -FUNCTION PARAMETER- \*\*\*\*\* DATE MMM-dd-yyyy \*\*\*\*\* TIME 12:07 \*\*\*P.01

000 MON/TEL DIAL:[Monitor] Monitor	050 RING DET MODE:[Normal] Normal
001 ALARM STATUS:[Timer] Timer	051 -----
002 STOP COMM.JRNL:[On] On	052 PULSE RATE:[10pps] 10pps
003 CONTINUOS POLL:[off] Off	053 -----
004 NUMERIC ID SET:[On] On	054 -----
005 COUNTRY CODE:[999]999	055 BUSY TONE CHECK:[On] On
006 ID DISPLAY:[Chara] Chara	056 -----
007 JNL COLUMN:[Station] Station	057 -----
008 MONITOR:[Off] Off	058 COMM. JRNL +IMAGE:[On] On
009 DC LOOP:[Off] Off	059 CONF.RCV REPORT:[On] On
010 TX LEVEL:[-9dBm] -9dBm	060 VERSION: DP-1810F AAV11502AU
011 RX LEVEL:[-43dBm] -43dBm	061 TX/RX/PRT/CPY:000080/000168/000003/000000
012 DTMF LEVEL:[-5dBm] -5dBm	062 PRINT COUNTER:[off] off
013 G3 RX EQL:[0dB] 0dB	063 -----
014 G3 TX EQL:[0dB] 0dB	064 -----
015 -----	065 -----
016 -----	066 -----
017 TX START:[14400bps ] 14400bps	067 -----
018 RX START:[14400bps ] 14400bps	068 NYSE FAX FORWARD:[Off] Off
019 ITU-T V.34:[On] On	069 NYSE LOCAL PRINT:[Inc] inc
020 ITU-T ECM:[On] On	070 LINE ERROR:[128] 128
021 BP TONE:[Off] Off	071 TOTAL ERROR:[ 10] 10
022 SIG. INTERVAL:[500ms] 500ms	072 CONTI. ERROR:[Off] Off
023 TCF CHECK:[Normal] Normal	073 ERROR DETECT:[Rate] Rate
024 CED FREQ.: [2100Hz] 2100Hz	074 RTN RECEIVE:[Discon] Discon
025 COMM. START-UP:[1'st] 1'st	075 CODING:[JBIG] JBIG
026 NON-STANDARD:[On] On	076 BATCH TX:[On] On
027 SHORT PROTOCOL B:[On] On	077 RX JAM LENGTH:[2 m] 2 m
028 SHORT PROTOCOL D:[On] On	078 -----
029 REMOTE DIAG.: [On] On	079 -----
030 CED & 300bps:[75ms] 75ms	080 DOC TOP FEED:[0.0mm] 0.0mm
031 RTC=EQL x 12:[Off] Off	081 DOC END FEED:[0.0mm] 0.0mm
032 V34TX START:[33600bps] 33600bps	082 JAM LENGTH:[ 2 m] 2 m
033 V34RX START:[33600bps] 33600bps	083 -----
034 V34 TX SR:[3429sr] 3429sr	084 LINE AS NOPAPER:[Ring] Ring
035 V34 RX SR:[3429sr] 3429sr	085 -----
036 -----	086 REDUCTION FINE:[On] On
037 PROTOCOL DISPLAY:[Off] Off	087 DARKER LEVEL:[2] 2
038 -----	088 NORMAL LEVEL:[8] 8
039 FLASH TIME:[500] 500ms	089 LIGHTER LEVEL:[4] 4
040 -----	090 -----
041 PAUSE TIME:[3sec] 3sec	091 -----
042 -----	092 SMOOTHING:[On] On
043 REDIAL INTERVAL:[3min] 3min	093 -----
044 REDIAL COUNT:[5] 5	094 -----
045 RING DET. COUNT:[2] 2	095 -----
046 ON-HOOK TIME:[5sec] 5sec	096 -----
047 RESPONSE WAIT:[55sec] 55sec	097 -----
048 -----	098 -----
049 -----	099 -----

Note:The power must be reset for the new parameter settings to take effect.

-PANASONIC DP-1810F-

\*\*\*\*\* -PANASONIC DP-1810F - \*\*\*\*\* -12345678901234567890- \*\*\*\*\*



# Function Parameter List (Sample)

\*\*\*\*\* -FUNCTION PARAMETER- \*\*\*\*\* DATE MMM-dd-yyyy \*\*\*\*\* TIME 12:07 \*\*\*P.02

100	-----	150	-----
101	-----	151	-----
102	-----	152	-----
103	-----	153	-----
104	-----	154	-----
105	-----	155	-----
106	-----	156	-----
107	-----	157	-----
108	-----	158	-----
109	-----	159	-----
110	MAC ADDRESS:080023000177	160	VERSION: OPTEPBBV31509
111	LAN I/F VERSION : OPTLAAAV00600AU	161	-----
112	INSERT EMAIL TXT:[Off] Off	162	-----
113	-----	163	-----
114	SYMBOL SET:[Std] Std	164	-----
115	TIME ZONE:[Direct] Direct	165	-----
116	OVERWRITE WARNING:[Yes] Yes	166	-----
117	-----	167	-----
118	-----	168	-----
119	-----	169	-----
120	-----	170	-----
121	-----	171	-----
122	-----	172	-----
123	-----	173	-----
124	-----	174	-----
125	-----	175	-----
126	-----	176	-----
127	-----	177	-----
128	-----	178	-----
129	-----	179	-----
130	BUSY-ACK TIMING:[In Busy] In Busy	180	-----
131	CMD RCV GRD TIMER:[3min] 3min	181	-----
132	PRT DATA TIMER:[1min] 1min	182	-----
133	-----	183	-----
134	-----	184	-----
135	JOB END TIMER:[30sec] 30sec	185	-----
136	-----	186	-----
137	-----	187	-----
138	-----	188	-----
139	-----	189	-----
140	-----	190	-----
141	-----	191	-----
142	-----	192	-----
143	-----	193	-----
144	-----	194	-----
145	-----	195	-----
146	-----	196	-----
147	-----	197	-----
148	-----	198	-----
149	-----	199	-----

Note:The power must be reset for the new parameter settings to take effect.

-PANASONIC DP-1810F-

\*\*\*\*\* -PANASONIC DP-1810F - \*\*\*\*\* -12345678901234567890- \*\*\*\*\*

## Note:

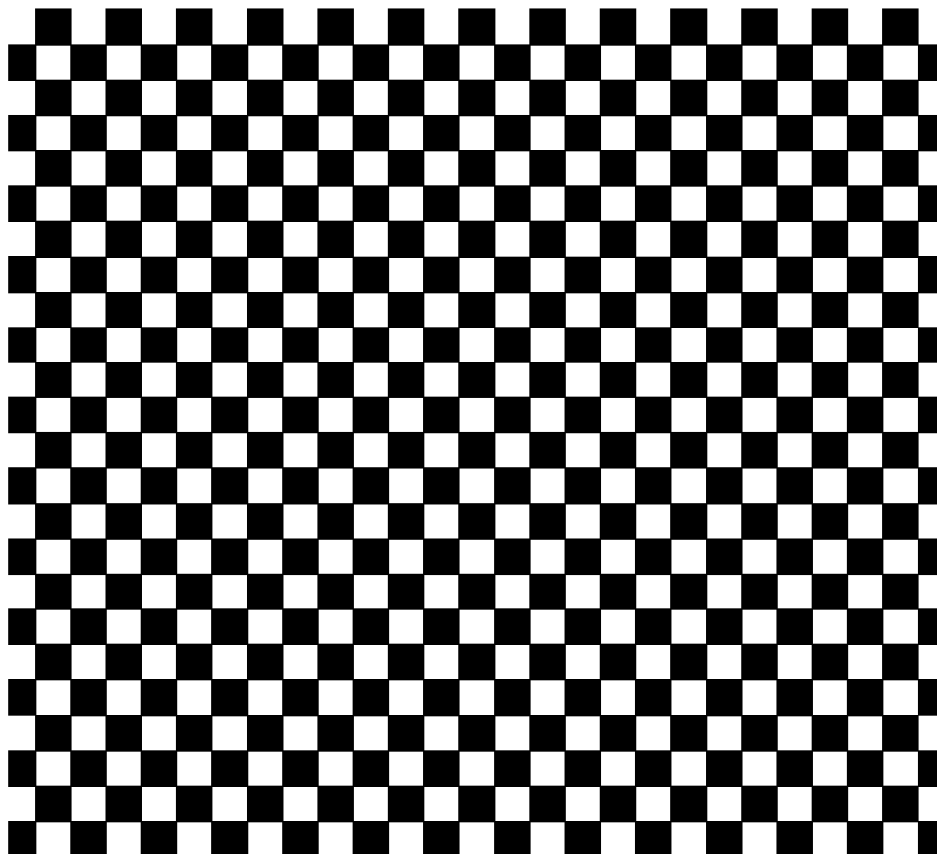
1. [ ] - Factory Default
2. The contents of the Function Parameter List may vary depending on the country's regulations.
3. " \* " mark will be shown on the left side of number when setting was changed from default.

### 5.2.3.2. Page Memory Test

A test pattern prints out for checking the page memory (IC120 and IC121 on the SC PCB) and printer mechanism using the following procedure.

Service Mode 3 for DP-1810F - Page Memory Test		
Step	Operation or Unit Condition	LCD Display
1	Standby	MMM-dd-yyyy 15:00 00%
2	Press "FUNCTION" and then "7".	SET MODE (1-4) ENTER NO. OR V Δ
3	Press "MONITOR" four times, then press "*".	SERVICE MODE ENTER NO. OR V Δ
4	Press "3". Use "V" or "Δ" to scroll to the desired printout.	PRINTOUT (1-7) 1:FUNC. PARAM. LIST
5	Press "3" and "START".	* PRINTING * PAGE MEMORY TEST
6	After printing is completed, the unit returns to the display in step 3.	SERVICE MODE ENTER NO. OR V Δ
7	Press "STOP" to return to standby.	MMM-dd-yyyy 15:00 00%

MMM-dd-yyyy 15:00  
VERSION: DP-1810F AAV11502AU  
LBP ROM VERSION :400046  
MEMORY SIZE: (2MB)  
TX/RX/PRT/CPY:000123/000456/000789/000333  
SHIPMENT SET



### 5.2.3.3. Printer Report

All printer errors are logged on the Printer Report which can be printed by the following procedure.

Service Mode 3 for DP-1810F - Printer Report		
Step	Operation or Unit Condition	LCD Display
1	Standby	MMM-dd-yyyy 15:00 00%
2	Press "FUNCTION" and then "7".	SET MODE (1-4) ENTER NO. OR V Δ
3	Press "MONITOR" four times, then press "**".	SERVICE MODE ENTER NO. OR V Δ
4	Press "3". Use "V" or "Δ" to scroll to the desired printout.	PRINTOUT (1-7) 1:FUNC. PARAM. LIST
5	Press "4" and "START".	* PRINTING * PRINTER REPORT
6	After printing is completed, the unit returns to the display in step 3.	SERVICE MODE ENTER NO. OR V Δ
7	Press "STOP" to return to standby.	MMM-dd-yyyy 15:00 00%

\*\*\*\*\*-PRINTER REPORT-\*\*\*\*\* DATE MMM-dd-yyyy \*\*\*\*\* TIME 19:02\*\*\*\*\*

LAST PRINT ERROR : MMM-dd-yyyy 15:38 J00 00-00000016  
CUSTOMER ID : 1234567890123456  
FIRMWARE VERSION :  
HOST : DP-1810F AAV12900AU  
PRINTER : 610050  
TRANSMIT COUNTER : 000475  
RECEIVE COUNTER : 000398  
COPY COUNTER : 000083  
PRINT COUNTER : 000016

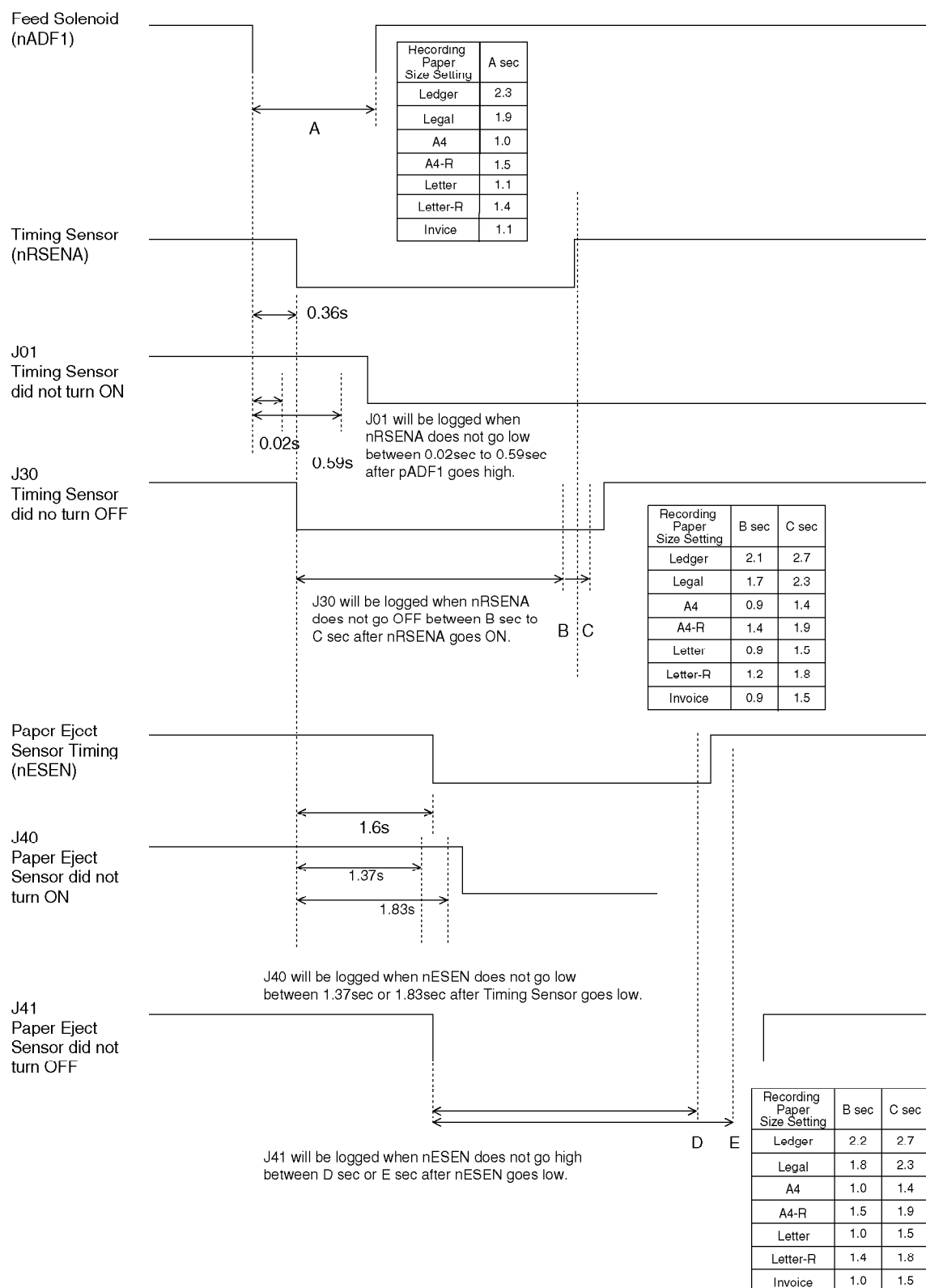
NO.DATE & TIME	ERROR CODE	RROR COUNT	NO.DATE & TIME	ERROR CODE	RROR COUNT
01.MMM-dd-yyyy 15:38 J00		00-00000016			
02.MMM-dd-yyyy 10:48 J02		00-00000016			

-PANASONIC DP-1810F-

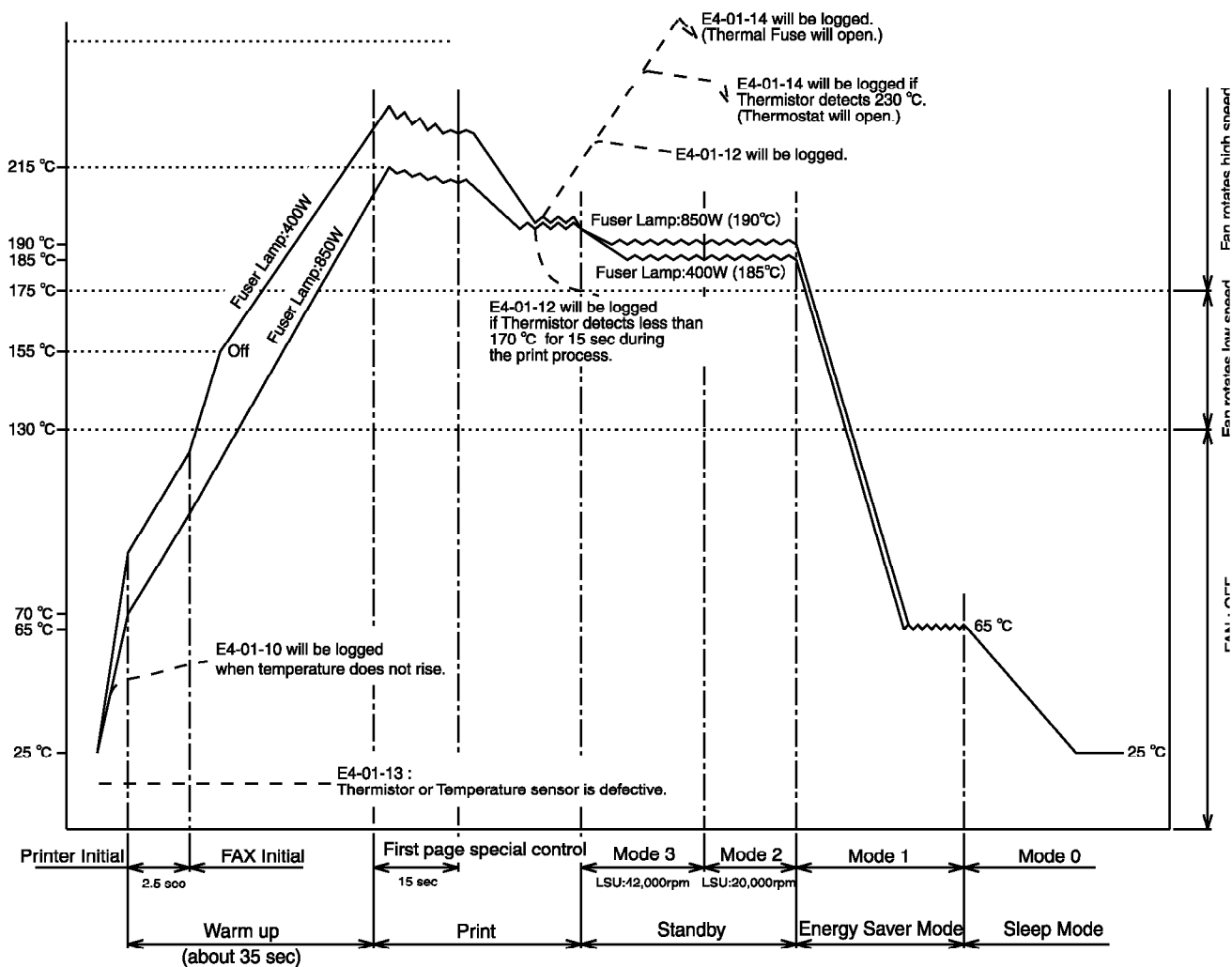
\*\*\*\*\*-PANAFAX DP-1810F-\*\*\*\*\* \*\*\*\*\*-12345678901234567890-\*\*\*\*\*

## 1. Printer Error Detail Explanation

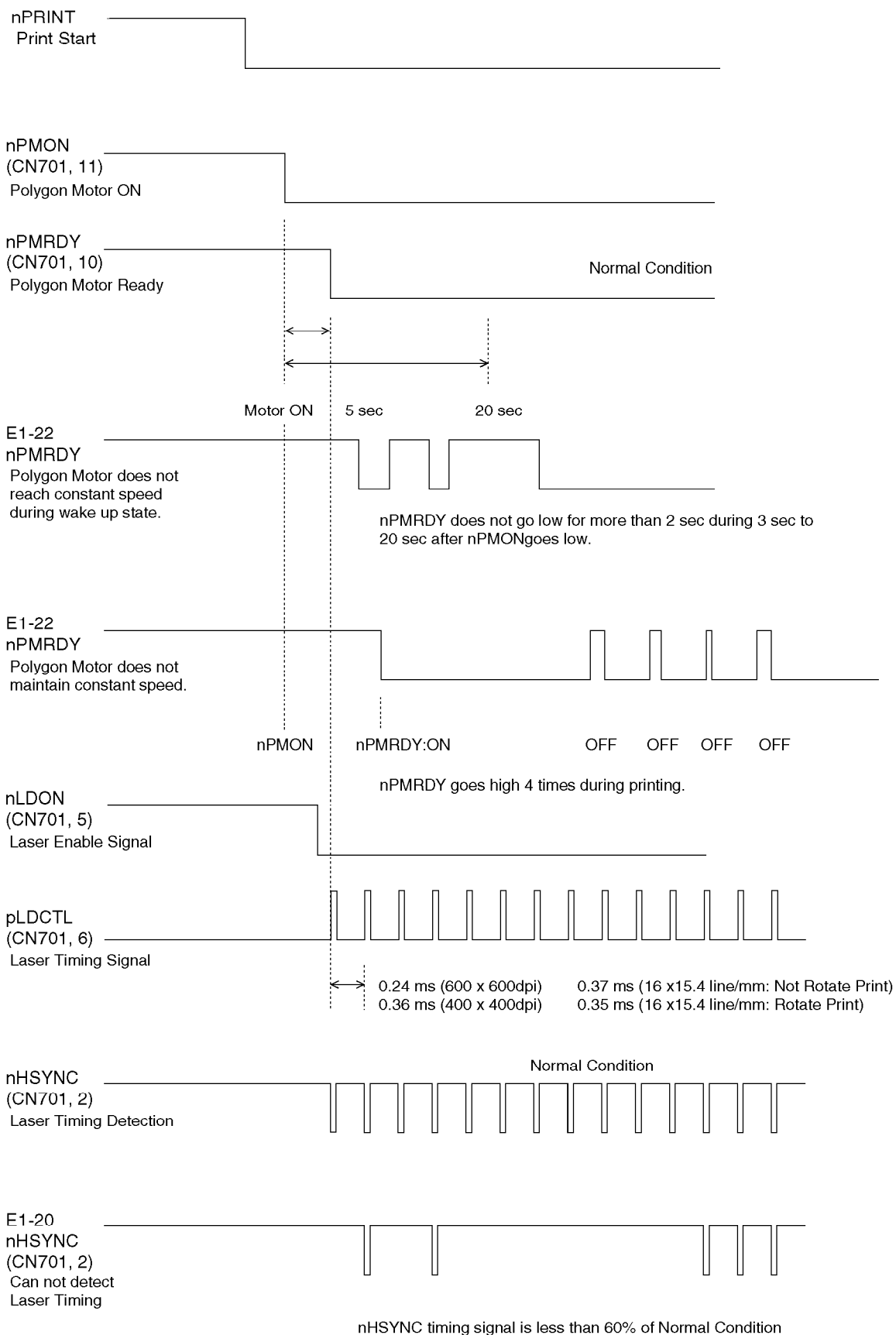
### Recording Paper Jam Detection (From 1st Tray to Inner Tray 1)



## Fuser Error Detection



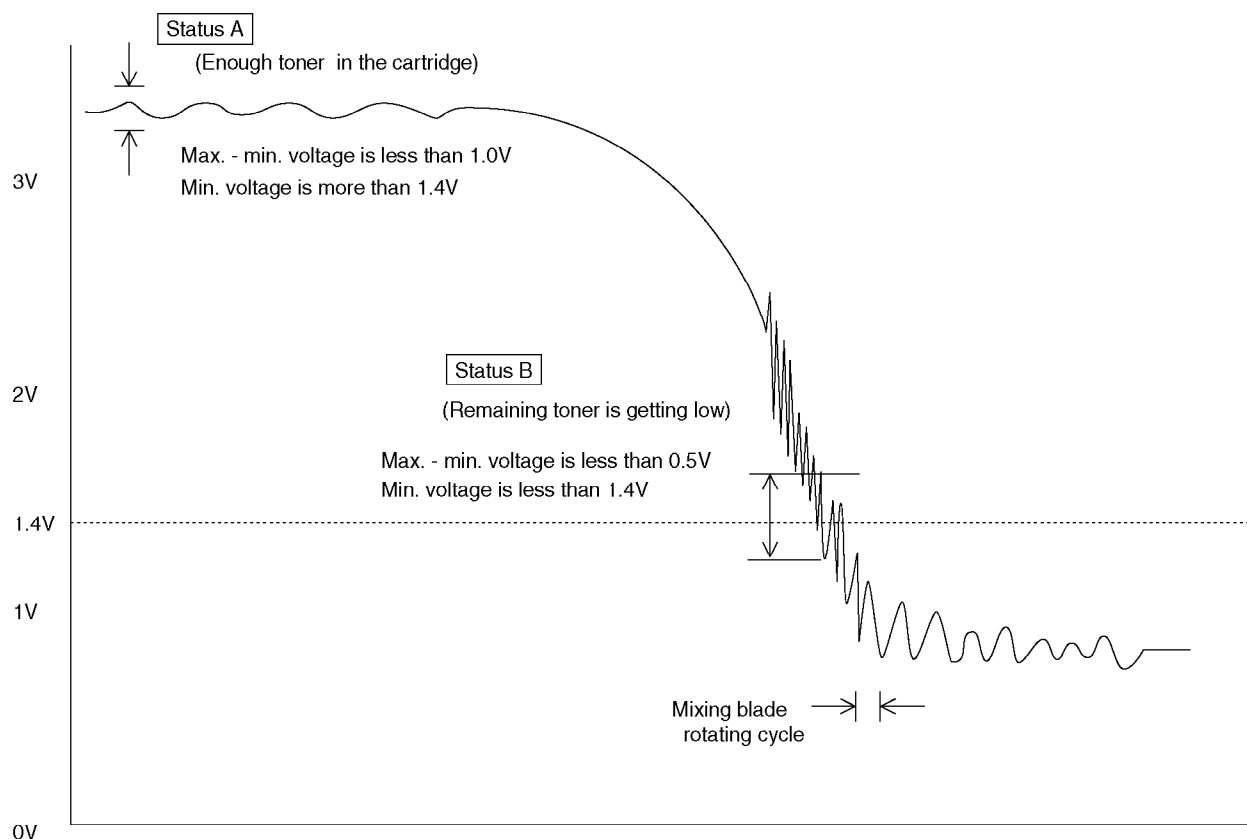
## LSU Error Detection





## Out of Toner Detection

### Toner Sensor Output Signal



Toner Sensor output may change when the mixing blade passes above the Toner Sensor. Therefore the output signal has a max. voltage and min. voltage during mixing blade rotation cycle (2.1 sec.).

E043 (U13)

If the unit detects Status B, 10 times during printing, the machine recognizes that the remaining toner is low and the display shows "REPLACE TONER CARTRIDGE".

E041 (U13)

After detecting E043 and the LBP Print Available Counter Value reaches "0" (after 300 pages are printed), the unit logs E041 (OUT OF TONER).

E45 (U13)

If the Waste Toner Box is not installed, the unit logs E045 and displays "NO WASTE TONER BOX".

#### 5.2.3.4. All Document Files

Print the document files from the Flash Memory.

Service Mode 3 for DP-1810F - All Document Files		
Step	Operation or Unit Condition	LCD Display
1	Standby	MMM-dd-yyyy 15:00 00%
2	Press "FUNCTION" and then "7".	SET MODE (1-4) ENTER NO. OR V Δ
3	Press "MONITOR" four times, then press "**".	SERVICE MODE ENTER NO. OR V Δ
4	Press "3". Use "V" or "Δ" to scroll to the desired printout.	PRINTOUT (1-7) 1:FUNC. PARAM. LIST
5	Press "5" and "START".	* PRINTING * ALL DOCUMENT FILES
6	After printing is completed, the unit returns to the display in step 3.	SERVICE MODE ENTER NO. OR V Δ
7	Press "STOP" to return to standby.	MMM-dd-yyyy 15:00 00%

### 5.2.3.5. Protocol Trace

Print a Protocol Trace Report for the previous communication.

Service Mode 3 for DP-1810F - Protocol Trace		
Step	Operation or Unit Condition	LCD Display
1	Standby	MMM-dd-yyyy 15:00 00%
2	Press "FUNCTION" and then "7".	SET MODE (1-4) ENTER NO. OR V Δ
3	Press "MONITOR" four times, then press "*".	SERVICE MODE ENTER NO. OR V Δ
4	Press "3". Use "V" or "Δ" to scroll to the desired printout.	PRINTOUT (1-7) 1:FUNC. PARAM. LIST
5	Press "6" and "START".	* PRINTING * PROTOCOL TRACE
6	After printing is completed, the unit returns to the display in step 3.	SERVICE MODE ENTER NO. OR V Δ
7	Press "STOP" to return to standby.	MMM-dd-yyyy 15:00 00%

```
***** PROTOCOL LOG. REPORT ***** DATE MMM-dd-yyyy ***** TIME 16:56 *****

STATUS      : OK
MODE        : ECM-TX (STANDARD)
SPEED       : 9600bps 0MS/L
REMOTE CAPA. : DIS 00 CE B9 C4 80 12
LOCAL CAPA.  : TSI 2B 20 20 20 38 37 2B 2B 2B 2B
               39 38 36 36 35 34 37 38 38 30
               DCS 00 C6 F8 44

COMMAND LOG.
REMOTE      : NSF   CSI   DIS           CFR
LOCAL       :
-----
REMOTE      : MCF
LOCAL       :      DCN

-PANASONIC DP-1810F-
*****-PANASONIC DP-1810F-*****-12345678901234567890-*****
```

### 5.2.3.6. Toner Cartridge Order Form

The Toner Cartridge Order Form can be printed out manually by the following procedure.

Service Mode 3 for DP-1810F - Toner Cartridge Order Form		
Step	Operation or Unit Condition	LCD Display
1	Standby	MMM-dd-yyyy 15:00 00%
2	Press "FUNCTION" and then "7".	SET MODE (1-4) ENTER NO. OR V Δ
3	Press "MONITOR" four times, then press "*".	SERVICE MODE ENTER NO. OR V Δ
4	Press "3". Use "V" or "Δ" to scroll to the desired printout.	PRINTOUT (1-7) 1:FUNC. PARAM. LIST
5	Press "7" and "START".	* PRINTING * TONER ORDER FORM
6	After printing is completed, the unit returns to the display in step 3.	SERVICE MODE ENTER NO. OR V Δ
7	Press "STOP" to return to standby.	MMM-dd-yyyy 15:00 00%

```

*****
>  TONER CARTRIDGE ORDER FORM  <
*****

**** The toner supply in your machine is running low **** (1)
To order a replacement Cartridge from your Authorized Dealer

                Panasonic Corp. (2)

by Phone:  1 201 111 5555 (3)
by Fax:    1 201 111 4444 (4)

Thank you for your order.

Customer Name and Address
=====

Ship to:_____ Bill to:_____
_____
_____

Attention:_____ Attention:_____
Phone No.:_____ Phone No.:_____
Customer ID: ABC COMPANY (5) P.O. No.(if required):_____
Toner Cartridge: DQ-TU10C (6) Serial No.:_____

Quantity Required:
  _____

_____ / /
Print your name and title Signature & Date

```

## Explanation of Contents

(1) Low Toner Message (Fixed)	"The toner supply in your machine is running low"
(2) Dealer Name	Up to 25 digits
(3) Toner Order Tel #	Up to 36 digits
(4) Toner Order Fax #	Up to 36 digits
(5) Customer ID	Up to 16 characters (User Identification Code)
(6) Toner Cartridge No.	DQ-TU10C

## 5.2.4. Service Mode 4 (Modem Test)

### 5.2.4.1. Binary Signal

This Service Mode is used to check the binary signal output. Signals can be output to the line using the following procedure.

Service Mode 4 for DP-1810F - Binary Signal		
Step	Operation or Unit Condition	LCD Display
1	Standby	MMM-dd-yyyy 15:00 00%
2	Press "FUNCTION" and then "7".	SET MODE (1-4) ENTER NO. OR V $\Delta$
3	Press "MONITOR" four times, then press "**".	SERVICE MODE ENTER NO. OR V $\Delta$
4	Press "4". Use "V" or " $\Delta$ " to scroll to the desired Modem Test.	MODEM TEST (1-5) 1: SIGNAL TEST
5	Press "START".	SIGNAL TEST IDLE (ENTER 1-9)
6	Enter the signal number (1-9) to select the binary signal.	SIGNAL TEST 300bps
7	Press "CLEAR" to end the signal generation. To select another signal, repeat step 6.	SIGNAL TEST IDLE (ENTER 1-9)
8	Press "STOP" twice to return to standby.	MMM-dd-yyyy 15:00 00%

Binary Signal Table

Number	Signals
1	V21 300bps
2	V27ter 2400bps
3	V27ter 4800bps
4	V29 7200bps
5	V29 9600bps
6	V17 TC7200bps
7	V17 TC9600bps
8	V33 12000bps
9	V33 14400bps

### 5.2.4.2. Tonal Signal

This Service Mode is used to check the tonal signal output. Signals can be output to the line using the following procedure.

Service Mode 4 for DP-1810F - Tonal Signal		
Step	Operation or Unit Condition	LCD Display
1	Standby	MMM-dd-yyyy 15:00 00%
2	Press "FUNCTION" and then "7".	SET MODE (1-4) ENTER NO. OR V Δ
3	Press "MONITOR" four times, then press "**".	SERVICE MODE ENTER NO. OR V Δ
4	Press "4". Use "V" or "Δ" to scroll to the desired Modem Test.	MODEM TEST (1-5) 1: SIGNAL TEST
5	Press "2" and "START".	SIGNAL TEST IDLE (ENTER 1-7)
6	Enter the signal number (1-7) to select the binary signal.	TONAL TEST 1080Hz
7	Press "CLEAR" to end the signal generation. To select another signal, repeat step 6.	SIGNAL TEST IDLE (ENTER 1-7)
8	Press "STOP" twice to return to standby.	MMM-dd-yyyy 15:00 00%

Tonal Signal Table

Number	Signals
1	462 Hz
2	1080 Hz
3	1100 Hz
4	1300 Hz
5	1650 Hz
6	1850 Hz
7	2100 Hz



### 5.2.4.3. DTMF Signal

This Service Mode is used to check the DTMF (Dual Tone Multi Frequency) signal output. The DTMF signal can be generated using the following procedure.

Service Mode 4 for DP-1810F - DTMF Signal		
Step	Operation or Unit Condition	LCD Display
1	Standby	MMM-dd-yyyy 15:00 00%
2	Press "FUNCTION" and then "7".	SET MODE (1-4) ENTER NO. OR V Δ
3	Press "MONITOR" four times, then press "*".	SERVICE MODE ENTER NO. OR V Δ
4	Press "4". Use "V" or "Δ" to scroll to the desired Modem Test.	MODEM TEST (1-5) 1: SIGNAL TEST
5	Press "3" and "START".	DTMF TEST (1-2) 1: SINGLE
6a	Press "START" for DTMF Single Tone Generation.	SINGLE TONE ENTER (1-8)
7a	Enter the signal number (1-8) to select the DTMF signal.	SINGLE TONE 697Hz
6b	Press "2" and "START" for Dual Tone Generation.	DUAL TONE (0-#)
7b	Enter the signal number (0-#) to select the DTMF Dual tone.	DUAL TONE (0)
8	Press "CLEAR" to end the signal generation. To select another signal, repeat step 7a or 7b.	SINGLE TONE
9	Press "STOP" twice to return to standby.	MMM-dd-yyyy 15:00 00%

DTMF Single Tone Table

Number	DTMF Signal Tones
1	697 Hz
2	770 Hz
3	852 Hz
4	941 Hz
5	1209 Hz
6	1336 Hz
7	1477 Hz
8	1633 Hz

DTMF Dual Tone Table

Number	DTMF Dual Tones
0	941 Hz + 1336 Hz
1	697 Hz + 1209 Hz
2	697 Hz + 1336 Hz
3	697 Hz + 1477 Hz
4	770 Hz + 1209 Hz
5	770 Hz + 1336 Hz
6	770 Hz + 1477 Hz
7	852 Hz + 1209 Hz
8	852 Hz + 1336 Hz
9	852 Hz + 1477 Hz
*	941 Hz + 1209 Hz
#	941 Hz + 1477 Hz

#### 5.2.4.4. Binary Signal (V.34)

This Service Mode is used to check the binary signal output. Signals can be output to the line using the following procedure. (V.34)

Service Mode 4 for DP-1810F - Binary Signal		
Step	Operation or Unit Condition	LCD Display
1	Standby	MMM-dd-yyyy 15:00 00%
2	Press "FUNCTION" and then "7".	SET MODE (1-4) ENTER NO. OR V Δ
3	Press "MONITOR" four times, then press "**".	SERVICE MODE ENTER NO. OR V Δ
4	Press "4". Use "V" or "Δ" to scroll to the desired Modem Test.	MODEM TEST (1-5) 1: SIGNAL TEST
5	Press "4" and "START".	V.34 MODEM TEST ENTER NO. _
6	Enter the signal number (01-61) and press [SET] to select the binary signal.	V.34 MODEM TEST V34 2400sr 2400bps
7	Press "CLEAR" to end the signal generation. To select another signal, repeat step 7.	V.34 MODEM TEST ENTER NO. _
8	Press "STOP" twice to return to standby.	MMM-dd-yyyy 15:00 00%

Binary Signal Table

Number	Signals	Number	Signals	Number	Signals
01	V34 2400 sr 2400 bps	22	V34 3000 sr 9600 bps	43	V34 3429 sr 4800 bps
02	V34 2400 sr 4800 bps	23	V34 3000 sr 12000 bps	44	V34 3429 sr 7200 bps
03	V34 2400 sr 7200 bps	24	V34 3000 sr 14400 bps	45	V34 3429 sr 9600 bps
04	V34 2400 sr 9600 bps	25	V34 3000 sr 16800 bps	46	V34 3429 sr 12000 bps
05	V34 2400 sr 12000 bps	26	V34 3000 sr 19200 bps	47	V34 3000 sr 19200 bps
06	V34 2400 sr 14400 bps	27	V34 3000 sr 21600 bps	48	V34 3429 sr 16800 bps
07	V34 2400 sr 16800 bps	28	V34 3000 sr 24000 bps	49	V34 3429 sr 19200 bps
08	V34 2400 sr 19200 bps	29	V34 3000 sr 26400 bps	50	V34 3429 sr 21600 bps
09	V34 2400 sr 21600 bps	30	V34 3000 sr 28800 bps	51	V34 3429 sr 24000 bps
10	V34 2800 sr 4800 bps	31	V34 3200 sr 4800 bps	52	V34 3429 sr 26400 bps
11	V34 2800 sr 7200 bps	32	V34 3200 sr 7200 bps	53	V34 3429 sr 28800 bps
12	V34 2800 sr 9600 bps	33	V34 3200 sr 9600 bps	54	V34 3429 sr 31200 bps
13	V34 2800 sr 12000 bps	34	V34 3200 sr 12000 bps	55	V34 3429 sr 33600 bps
14	V34 2800 sr 14400 bps	35	V34 3200 sr 14400 bps	56	ANSam
15	V34 2800 sr 16800 bps	36	V34 3200 sr 16800 bps	57	CM
16	V34 2800 sr 19200 bps	37	V34 3200 sr 19200 bps	58	JM
17	V34 2800 sr 21600 bps	38	V34 3200 sr 21600 bps	59	INFO0c & TONEB
18	V34 2800 sr 24000 bps	39	V34 3200 sr 24000 bps	60	INFO0c & TONEA
19	V34 2800 sr 26400 bps	40	V34 3200 sr 26400 bps	61	PPh & AC & ALT
20	V34 3000 sr 4800 bps	41	V34 3200 sr 28800 bps		
21	V34 3000 sr 7200 bps	42	V34 3200 sr 31200 bps		

### 5.2.5. Service Mode 6 (RAM Initialization)

Initializes RAM and restores the Function Parameters to their default values.

**Note:**

This operation should be performed when the unit is first installed.

Service Mode 6 for DP-1810F		
Step	Operation or Unit Condition	LCD Display
1	Standby	MMM-dd-yyyy 15:00 00%
2	Press "FUNCTION" and then "7".	SET MODE (1-4) ENTER NO. OR V Δ
3	Press "MONITOR" four times, then press "**".	SERVICE MODE ENTER NO. OR V Δ
4	Press "6". Use "V" or "Δ" to scroll to the desired RAM Initialization.	* RAM INITIALIZE * PARAMETER INITIALIZE
5	Press "V" or "Δ" to select the initialization mode.	* RAM INITIALIZE * LOGO/ID/PSWD CLEAR
6	Press "START".	LOGO/ID/PSWD CLEAR * COMPLETED *
7	Return to step 3 and press "STOP" to return to standby.	MMM-dd-yyyy 15:00 00%

RAM Initialization Table

No.	Initialize Mode	Description
99	SHIPMENT SET (A)	Deletes all setting information, except parameter number 80 and 81, then set default values.
98	SHIPMENT SET (B)	Deletes all setting information, except parameter number 61, 80 and 81, then set default values.
97	FLASH MEMORY CLEAR	Deletes all information in the Flash Memory.
1#	MANUFACTURE SET	Factory use only. DO NOT USE IN THE FIELD.
16	LBP ERROR LOG CLEAR	Clears the Printer Error Log.
15	LOGO/ID/PSWD CLEAR	Clears the Logo, ID, Polling Password.
14	ALL JOB CLEAR	Clears all Jobs stored in Flash Memory.
13	PROGRAM DIAL CLEAR	Clears the Program keys.
12	AUTO DIAL CLEAR	Clears the One-touch, ABBR Numbers and Phone Books.
11	JOURNAL CLEAR	Clears the Journal contents.
*	PARAMETER INITIALIZE	Restores the Fax and Function Parameters to default values.

## 5.2.6. Service Mode 8 (Check & Call)

### 5.2.6.1. Overview

This feature enables the Authorized Servicing Dealers to manage and improve the machine maintenance to their customers by alerting them of equipment problems. It also can be used as a Supply Sales Tool by alerting the Dealer that the unit is running Low on Toner. The function overview is as follows:

1. The machine's printer error information is stored in the Printer Report.
2. The printer report can be manually printed when required.
3. When printer errors occurs, the unit can automatically transmit the Service Alert Report to the pre-registered telephone number or email address.
4. When the unit detects Low Toner or PM counter reached the maintenance timing, it can automatically transmit the Maintenance Alert Report to the pre-registered telephone number or email address.
5. When the unit detects Low Toner, it can automatically print out the Toner Order Form with pre-registered order information.

### 5.2.6.2. Printer Reports

#### • Conditions under which a report can be printed or transmitted

1. Manual print  
The Printer Report can be printed by Service Mode 3. (See Sect. 5.2.3.1.)
2. Automatic transmission/printout
  - a. Service Alert Report  
When the unit detects an Emergency Printer Error, the unit will immediately transmit the Service Alert Report to the pre-registered telephone number or email address. However, the unit will not transmit the Service Alert Report if it finds the same error within the same date in the error log.
  - b. Maintenance Alert Report  
When the unit detects Low Toner, the unit can automatically transmit the Maintenance Alert Report to the pre-registered telephone number or email address. Refer to the Printer Error Code Table.
  - c. Toner Order Form  
When the unit detects Low Toner, the unit can automatically print the Toner Order Form with the pre-registered order information.

#### Note:

The Service and Maintenance Alert Reports are managed in the same manner as the normal memory transmission (Retry, Incomplete, File List, Display while it is transmitting, Journal).

#### • Printer Error Code Table

Info. Code	Printer Error Code	Log Only	Tx Report	Content of Error
E1-20	22	O	O	Laser unit horizontal synchronization error.
E1-22	20	O	O	Polygon motor does not reach to constant speed within specified time.
	21	O	O	Polygon motor does not rotate constantly.
E3-20	41	O	O	Main motor (DC motor) rotation error.
E4-01	10	O	O	Fuser temperature does not increase even heater on.
	11	O	O	Fuser temperature does not decrease even heater off.
	12	O	O	Overshoot or undershoot occurred.
	13	O	O	Thermistor open.
	14	O	O	Detect overheat.
E4-02	15	O	O	Paper Jam in Fuser Unit

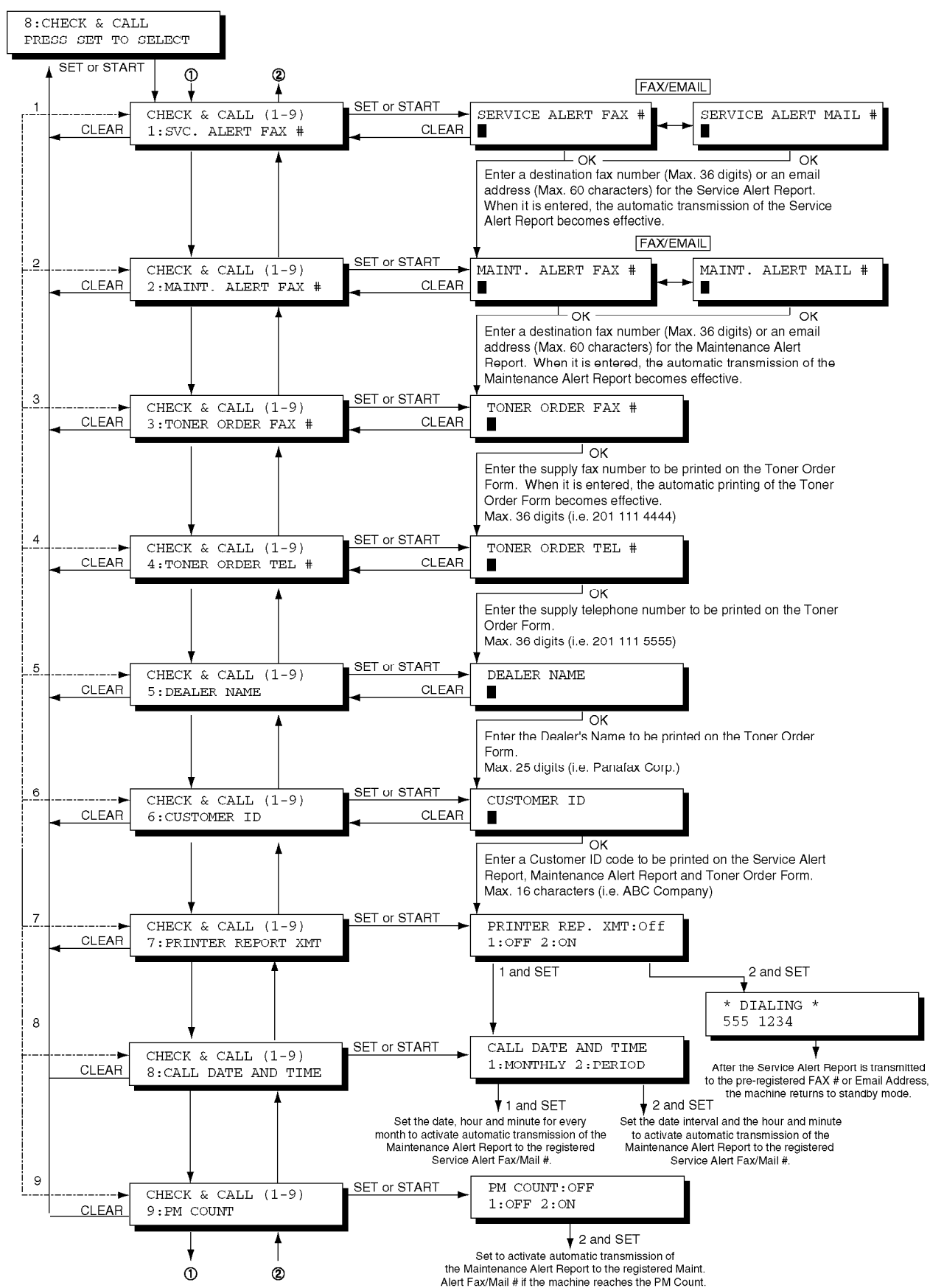
Info. Code	Printer Error Code	Log Only	Tx Report	Content of Error
E4-10	30	O	O	Exhaust fan motor (1) does not rotate.
E5-11	40	O	O	Fuser Thermistor and Toner sensor error.
E5-12	-	O	O	Main CPU/LPC interface error.
E5-22	51	O	O	Finisher/LPC unit interface error.
E7-10	-	O	O	Sub CPU System error.
E7-11	-	O	O	Scanning abnormal from Platen Glass.
E7-12	-	O	O	Xenon Lamp is Disconnected.
E13	-			Out of Toner.
J00	80	O		Paper jam. Refer to the Jam Error Code Table for details. J80~89 Info. Code is for DP-2010E only.
J01	81	O		
J02	82	O		
J03	83	O		
J04	84	O		
J07	85	O		
J08	86	O		
J09	87	O		
J12	89	O		
J13	8A	O		
J14	8B	O		
J22	70	O		
J23	71	O		
J24	72	O		
J30	88	O		
J33	73	O		
J34	B4	O		
J40	8C	O		
J41	8D	O		
J42	74	O		
J80	B0	O		
J81	B1	O		
J82	B2	O		
J83	B3	O		
J84	B5	O		
J85	B6	O		
J86	B7	O		
J87	B8	O		
J88	7A	O		
J89	7B	O		
J89	7C	O		
J89	7D	O		
J90	90	O		
J91	91	O		
J92	92	O		
U1	61			Front Cover Open.
U1	62			Right Cover Open.

Info. Code	Printer Error Code	Log Only	Tx Report	Content of Error
U13	60			No Toner Cartridge is installed.
U13			X	Low Toner
U7	66			1st Feed Cover Open.
U7	67			2nd Feed Cover Open.
U7	68			3rd Feed Cover Open.
U7	69			4th Feed Cover Open.
U7	6A			Paper Transport Unit Open.

**Note:**

1. Transmission Report: o = Service Alert Report, x = Maintenance Alert Report
2. Condition: R = Receive Mode, C = Copy Mode, S = Standby Mode, T = Transmit Mode

### 5.2.6.3. Setting Operation





**Note**

**1. Service Alert Report**

To enable the automatic transmission of Service Alert Report, enter the destination fax telephone number or the email address in the "SERVICE ALERT (FAX # or MAIL #)" field. When a printer error occurs, the Service Alert Report is transmitted to the designated number automatically. A blank entry in this field, disables the Automatic transmission of the Service Alert Report.

**2. Maintenance Alert Report**

To enable the automatic transmission of Maintenance Alert Report, enter the destination fax telephone number or the email address in the "MAINT. ALERT (FAX # or MAIL #)" field. When a printer error occurs, the Maintenance Alert Report is transmitted to the designated number automatically. A blank entry in this field, disables the Automatic transmission of the Maintenance Alert Report.

**3. Toner Order Form**

To enable the automatic printout of the Toner Order Form, enter the destination fax telephone numbers in the "Toner Order FAX #" field. When a low toner error occurs, the Toner Order Form is printed automatically. A blank entry in this field, disables the automatic printout of the Toner Order Form.

**4. SERVICE ALERT FAX #**, this would be the fax telephone number for the Dealer's Service Department.

**SERVICE ALERT MAIL #**, this would be the email address for the Dealer's Service Department.

**MAINT. ALERT FAX #**, this could be the fax telephone number for the Dealer's Supply Sales Desk.

**MAINT. ALERT MAIL #**, this could be the email address for the Dealer's Supply Sales Desk.

**TONER ORDER FAX #**, this could be the fax telephone number for the Dealer's Supply Sales Desk.

**TONER ORDER TEL #**, this could be the voice telephone number for the Dealer's Supply Sales Desk.

**DEALER NAME**, this name is printed on the Toner Order Form.

**CUSTOMER ID**, to identify your customer, enter up to 16 characters user code in this field. This name will be printed on the Service Alert Report, Maintenance Alert Report and Toner Order Form.

## 5.2.6.4. SERVICE ALERT REPORT FORMAT

```

***** DATE MMM-dd-yyyy ***** TIME 19:00 *****

> SERVICE ALERT REPORT <
*****

LAST PRINT ERROR : MMM-dd-yyyy 18:30 E03-20 41 00-00000835

(1) CUSTOMER ID : ABC COMPANY

(2) FIRMWARE VERSION
    HOST : DP-1810F AAV12900PU
    CONTROL PANEL : 10300
    PRINTER : 400046

(3) COUNTER INFORMATION:

          PM CYCLE      CURRENT
F7-02 TOTAL COUNT      (-----)      000835
F7-03 PM COUNT          120000          000835
F7-04 SCANNER PM COUNT (-----)      000401
F7-05 ADF/iADF PM COUNT (-----)      000326
F7-06 OFC DRUM COUNT    045000          000835
F7-27 DRUM ROTATE EQUIVALENT (-----) 000835
F7-07 PROCESS UNIT COUNT 054464
F7-08 PAPER TRANSPORT COUNT

F7-11 SHEET BYPASS COUNT : 000249 F7-20 COPY PRINT COUNT : 000575
F7-12 1st PAPER TRAY COUNT : 000006 F7-21 COPY SCAN COUNT : 000065
F7-13 2nd PAPER TRAY COUNT : 000391 F7-22 PC PRINT COUNT : 000000
F7-14 3rd PAPER TRAY COUNT : 000000 F7-23 PC SCAN COUNT : 000000
F7-15 4th PAPER TRAY COUNT : 000000

F7-16 ADF/iADF COUNT : 000326 F7-24 FAX TRANSMIT COUNT : 000240
F7-17 ADF/iADF READ COUNT : 000320 F7-25 FAX RECEIVE COUNT : 000082
F7-18 SCANNER COUNT : 000401 F7-26 FAX PRINT COUNT : 000077
F7-19 SCANNER READ COUNT : 000198

(4) PRINT ERROR:
NO. DATE & TIME ERROR CODE ERROR COUNT | NO. DATE & TIME ERROR CODE ERROR COUNT
-----|-----
01 MMM-dd-yyyy 18:30 E03-20 41 00-00000835 | 16 MMM-dd-yyyy 18:30 E04-10 30 00-00000830
" | "
" | "
" | "
" | "
" | "
" | "
" | "
" | "
" | "
" | "
15 MMM-dd-yyyy 12:30 J02 00-00000155 | 30 MAR-dd-yyyy 11:30 J71 02-00000298

          -LOGO PANASONIC -
***** CHARACTER ID ***** 31415926535897932384 *****

```

### Explanation of Contents

- (1) Customer ID
- (2) Firmware Version
- (3) Counter Information
- (4) Print Error

Last 30 records (Latest on top)

## 5.2.6.5. MAINTENANCE ALERT REPORT FORMAT

```

***** DATE MMM-dd-yyyy ***** TIME 12:00 *****

*****
> MAINTENANCE ALERT REPORT <
*****

LAST PRINT ERROR : MACHINE IS RUNNING OUT OF TONER (1)

CUSTOMER ID      : ABC COMPANY (2)

FIRMWARE VERSION (3)
  HOST           : DP-1810F  AAV11000AU
  CONTROL PANEL  : 10300
  PRINTER        : 400046

TRANSMIT COUNTER : 000244 (4)
RECEIVE COUNTER  : 000082
COPY COUNTER     : 000000
PRINT COUNTER    : 000000

NO. DATE & TIME   ERROR CODE  ERROR COUNT   NO. DATE & TIME   ERROR CODE  ERROR COUNT
-----
*****

-LOGO PANASONIC -

***** -CHARACTER ID - ***** -31415926535897932384-*****

```

### Explanation of Contents

- |  |  |
|--|--|
| (1) Low Toner Message (Fixed)                        | "MACHINE IS RUNNING OUT OF TONER"              |
| (2) Customer ID                                      | Up to 16 characters (User Identification Code) |
| (3) Firmware Version                                 |  |
| (4) Transmission / Reception / Copy / Print Counters |  |

\*\*\*\*\*  
> TONER CARTRIDGE ORDER FORM <  
\*\*\*\*\*

\*\*\*\* The toner supply in your machine is running low \*\*\*\* (1)  
To order a replacement Cartridge from your Authorized Dealer

Panasonic Corp. (2)

by Phone: 1 201 111 5555 (3)  
by Fax: 1 201 111 4444 (4)

Thank you for your order.

Customer Name and Address  
=====

Ship to: \_\_\_\_\_ Bill to: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

Attention: \_\_\_\_\_ Attention: \_\_\_\_\_

Phone No.: \_\_\_\_\_ Phone No.: \_\_\_\_\_

Customer ID: ABC COMPANY (5) P.O. No. (if required): \_\_\_\_\_

Toner Cartridge: DQ-TU10C (6) Serial No.: \_\_\_\_\_

Quantity Required:

\_\_\_\_\_  
Print your name and title

\_\_\_\_\_  
Signature & Date

## Explanation of Contents

- |                               |   |
|-------------------------------|---|
| (1) Low Toner Message (Fixed) | "The toner supply in your machine is running low" |
| (2) Dealer Name               | Up to 25 digits                                   |
| (3) Toner Order Tel #         | Up to 36 digits                                   |
| (4) Toner Order Fax #         | Up to 36 digits                                   |
| (5) Customer ID               | Up to 16 characters (User Identification Code)    |
| (6) Toner Cartridge No.       | DQ-TU10C  |

## 5.2.7. Service Mode 9 (System Maintenance)

### 5.2.7.1. Overview

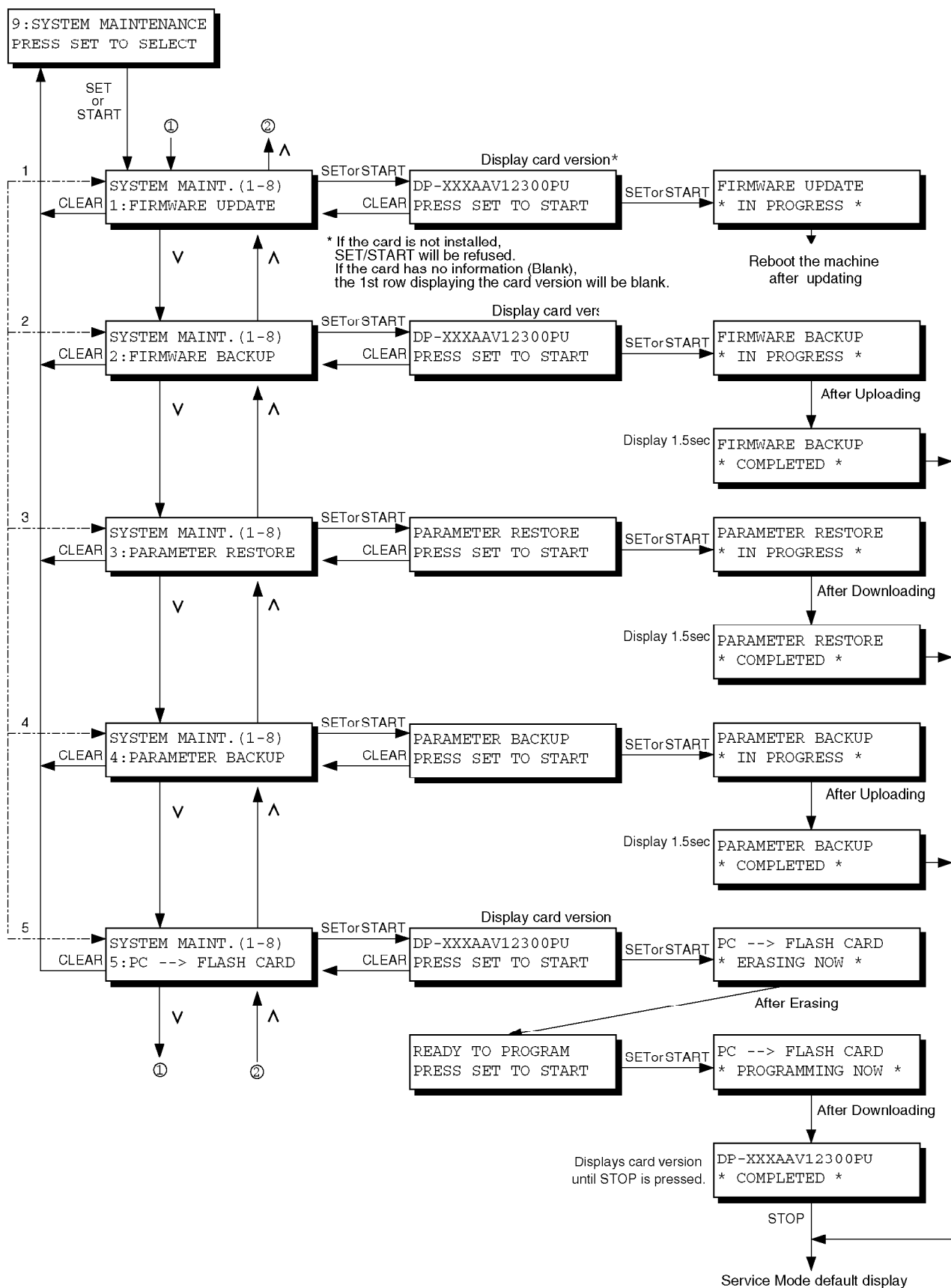
This Service Mode is used to maintain and/or update the firmware of the machine. Use the following procedure for System Maintenance.

Service Mode 9 for DP-1810F		
Step	Operation or Unit Condition	LCD Display
1	Standby	MMM-dd-yyyy 15:00 00%
2	Press "FUNCTION" and then "7".	SET MODE (1-4) ENTER NO. OR V Δ
3	Press "MONITOR" four times, then press "*".	SERVICE MODE ENTER NO. OR V Δ
4	Press "9". Use "V" or "Δ" to scroll to the desired maintenance task.	SYSTEM MAINT. (1-8) 1:FIRMWARE UPDATE
5	Press "START" to view the current firmware, and press "START" again to update it. To perform other maintenance task, enter a No. or use "V" or "Δ" to scroll to the desired task. Ex: Enter "2".	SYSTEM MAINT. (1-8) 2:FIRMWARE BACKUP
6	Press "START" and "SET".	FIRMWARE BACKUP * IN PROGRESS *
7	After the backup is completed, repeat step 5 through 6 to request another operation.	SERVICE MODE ENTER NO. OR V Δ
8	Press "STOP" to return to standby.	MMM-dd-yyyy 15:00 00%

System Maintenance Table

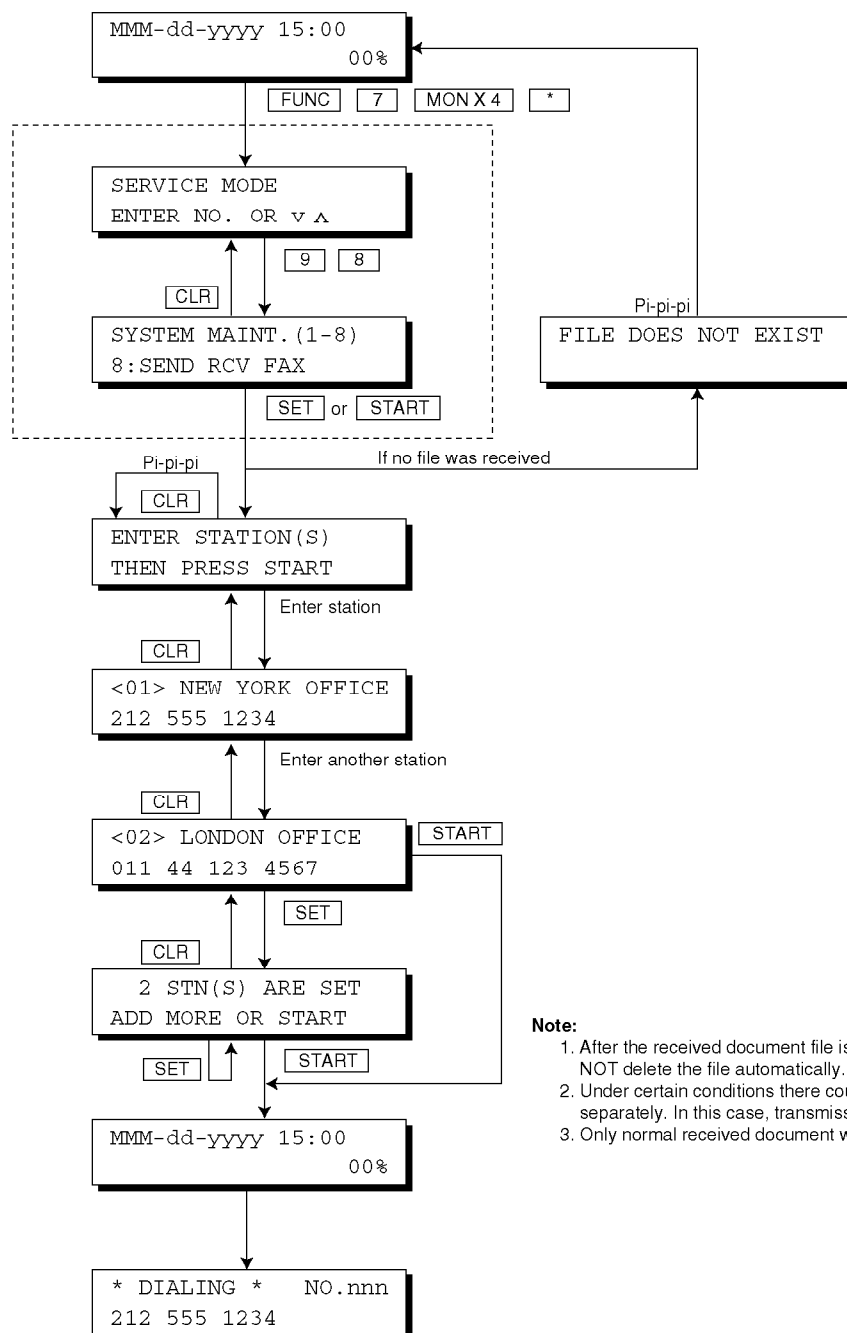
No.	Maintenance Mode	Description
1	FIRMWARE UPDATE	Updates the firmware in the machine with the Master Firmware Card. After the firmware is updated, the machine reboots and returns to standby
2	FIRMWARE BACKUP	Creates a Backup Card of the machine's firmware. (A 4 MB or higher Flash Memory Card is required)
3	PARAMETER RESTORE	Restores the parameters from the Backup Card into the machine.
4	PARAMETER BACKUP	Creates a Backup Card of the machine's parameters. (A 1 MB or higher Flash Memory Card is required)
5	PC → FLASH CARD	Creates a Master Firmware Card using the Firmware Update Kit. (A 2 MB or higher Flash Memory Card is required)
8	SEND RECEIVED FILE	Transfers documents from memory to another fax machine during a fatal printer error.

## 5.2.7.2. Operation



### 5.2.7.3. Send Received File

This function is the relief mode which makes it possible to retrieve memory received documents during a fatal printer error by transferring the documents to another fax machine.



**Note:**

1. After the received document file is successfully transmitted, unit will NOT delete the file automatically.
2. Under certain conditions there could be two (2) received files stored separately. In this case, transmission will be made separately.
3. Only normal received document will be transmitted.

## 6 System Description

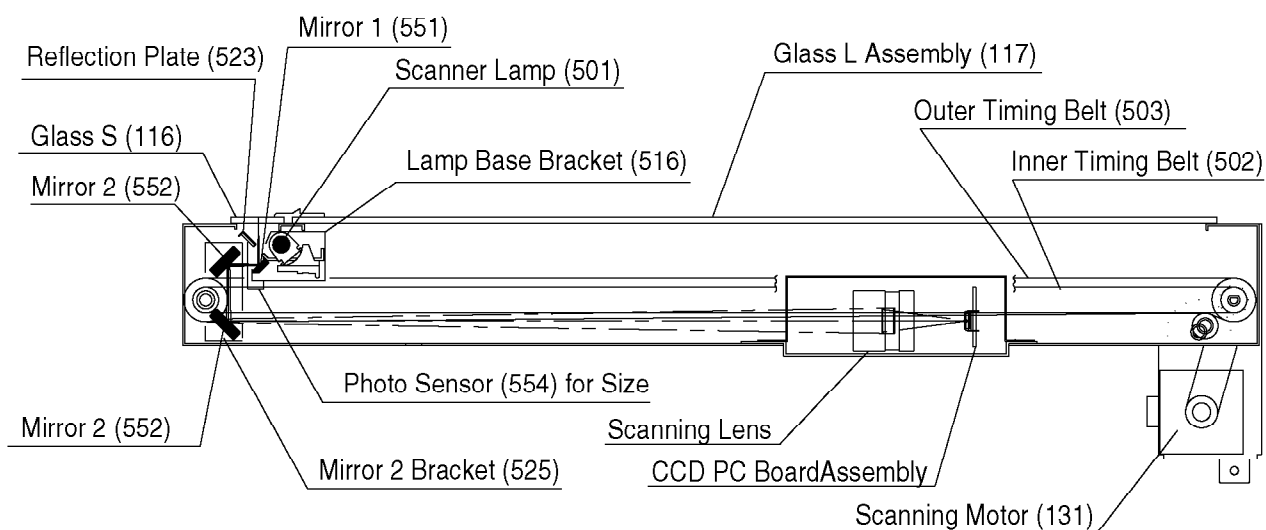
### 6.1. Mechanical Operation

#### 6.1.1. Scanning Mechanism (Flatbed)

##### 1. Scanning Mechanism

The Scanning Mechanism consisting of Lens, CCD PC Board Assembly, Mirrors (551,552), Scanner Lamp (501), Lamp Base Bracket (516) and Mirror 2 Bracket (525), is used to scan originals.

- The Mirror 1 (551) and Mirrors 2 (552) reflect image information, in the form of light, through the Lens.
- The Lens focuses the image information and passes it to the CCD.
- The CCD, mounted on the CCD PC Board, converts the image information into an electrical signal.
- The Inner and Outer Timing Belts (502 & 503) driven by the Scanning Motor (131), move the Scanner Assembly.



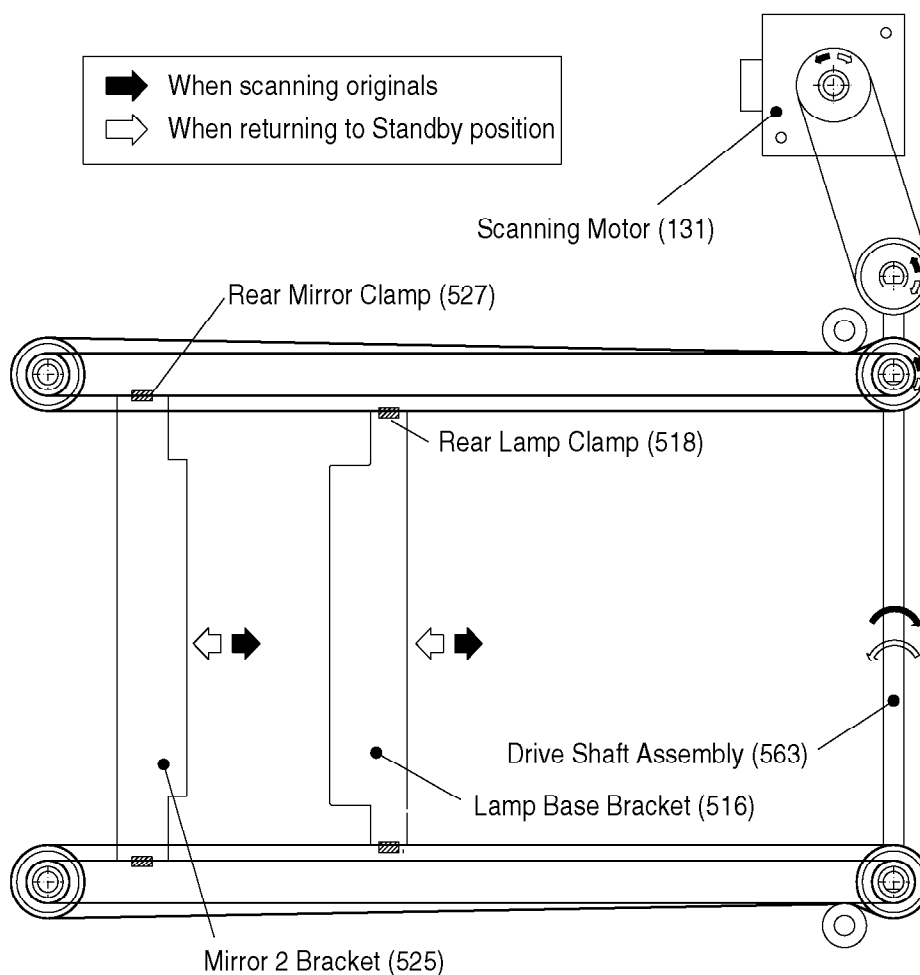
##### 2. Transmit Mechanism

- When ADF is used, originals are scanned on the Glass S (116). The Glass L Assembly (117) is used when scanning on the Platen.
- The Scanning point is established by the Photo Sensor (554) for Size.
- Document size is manually set when the Platen is used.
- The Transmit Mechanism starts feeding and scanning originals based on the above Document Size Setting.
- When scanning is completed, the Scanning Motor (131) stops rotating and the Lamp Base and Mirror 2 Brackets (516 & 525) return to the standby position.



### 3. Drive Mechanism

During scanning, the Lamp Base Bracket (516) and Mirror 2 Bracket (525) move in the direction of the Black arrow and while returning to standby position, it moves in the direction of the White arrow as shown in the illustration below. The location of these two brackets are established by the Photo Sensor (554) for Size and the scanning length is established by the setting on the Control Panel. The following illustrates the Drive system.



## **6.2. Automatic Document Feeder**

The ADF (Automatic Document Feeder) automatically feeds paper into the unit, one original at a time. Its main features are:

1. Place originals Face-Up
2. Correct Order Stacking (Collation Mode)
3. Paper Feed Mechanism with Pre Feed Roller

The following is the ADF Mechanical operation description.

### **6.2.1. Automatic Document Feeder**

#### **1. Initialization**

The ADF begins its operation with the Eject phase in order to feed and eject any originals stuck inside the ADF. The ADF Motor starts rotating Feed Roller (409), Exit Roller (316) and Ejecting the Original, after a few seconds the Clutch (1141) reverses the rotation direction raising the Original Stopper to its standby position.

#### **2. Original Setting and Size Sensors**

Place the original(s) face up on the ADF until the leading edge stops against the Original Stopper. Adjust the Original Guides (332 & 335) to center the original on the ADF. The Original Stopper prevents originals from skewing and multiple feeding. The Photo Sensor (604) for Original Detection detects the presence of Originals on the ADF when the original(s) actuate NP Actuator (407) on the Lower Paper Feed Guide (401). The two Sensors mounted on the SNS PC Board (134) which is installed in the Original Tray (333, 327) are actuated by the Original Guides, their position determines the original's width and 2 Photo Sensors (604) for Original Length detect the length of the original.

#### **3. Feeding and Separation**

When the Start button is pressed, the Clutch (1141) starts to rotate and uppers the Original Stopper, causing the Pre Feed Roller (420) to apply a downwards pressure against the originals. After a few seconds, the Clutch (1141) reverses the direction of rotation and the Pre Feed Roller is raised upwards along with the Original Stopper. The upper original is fed to the Paper Feed Roller (679), and the Separation Rubber (428) prevents multiple feeding.

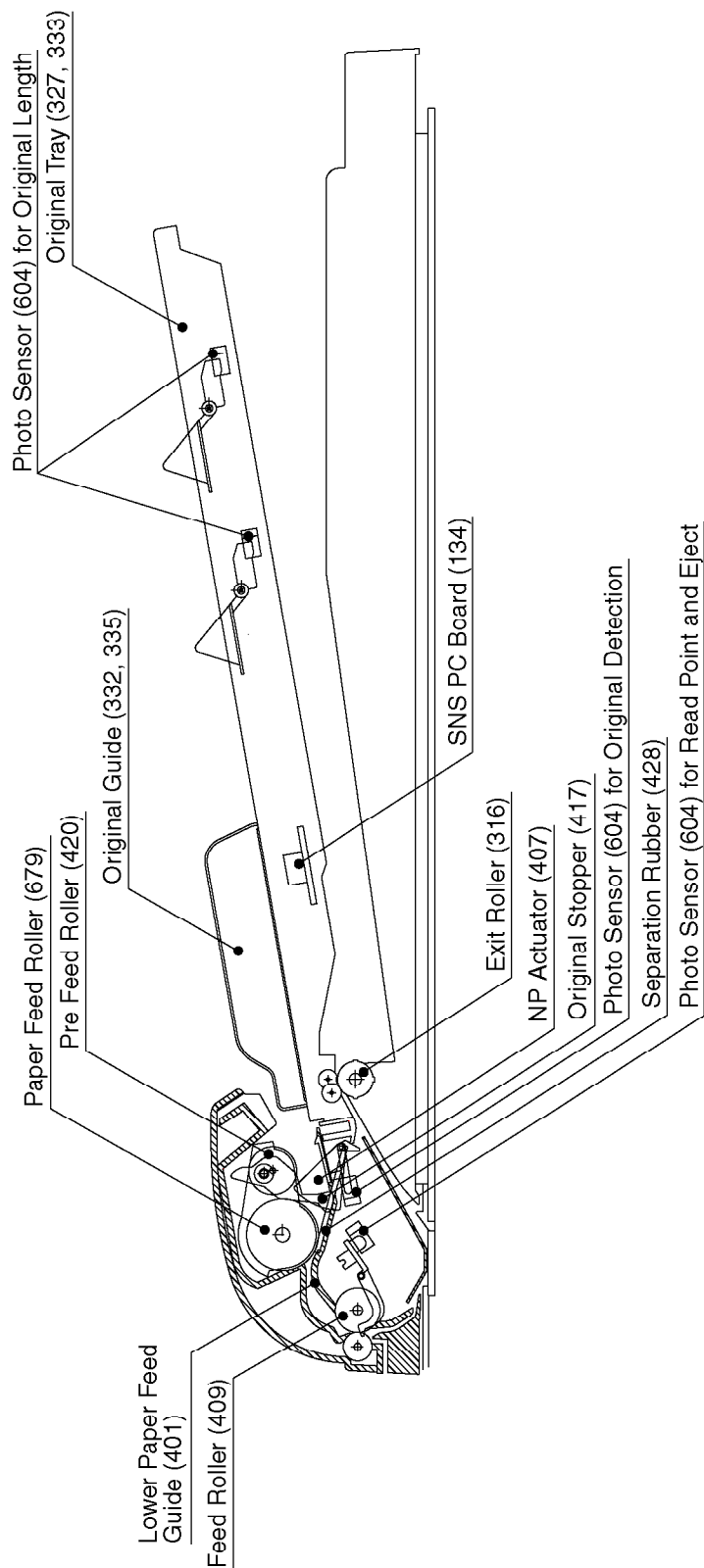
#### **4. Transmission and Ejection**

The original is fed into the Feed Roller (409) and when the original actuates the Photo Sensor (604) for Read Point and Eject, the Paper Feed Roller (679) stops rotating. The Photo Sensor (604) for Read Point and Eject detects the scanning position and the Feed Roller (409) transports the original while scanning. The Exit Roller (316) feeds and ejects the original out of the ADF. If there are additional originals on the ADF, the next one is fed into the feeder.

#### **5. Final Operation**

After ejecting the last original on the ADF, the Clutch reverses the direction of rotation raising the Original Stopper to its standby position.

## Automatic Document Feeder



### 6.3. Inverting Automatic Document Feeder

The i-ADF automatically inverts two-sided original(s) for faxing or copying of the second side. This feature enables machines with a duplexer mounted to perform duplex copying.

An i-ADF (Inverting Automatic Document Feeder) functions in a similar manner as the ADF (Automatic Document Feeder), with the main exception being the document eject path after scanning. The following is the description of the main differences.

For DP-2010E only.

#### 1. Switching from the ADF mode to the i-ADF mode

After passing through the Read Point Sensor (604), the path of the original is switched over by the Duplex 2 Guide (2138), to the Exit Roller or to the Inverting Feed Roller (2135). For single-side scanning, the Duplex 2 Guide is rotated clockwise by the Solenoid guiding the original to the Exit Roller. For double-side scanning, the Duplex 2 Guide is rotated counter-clockwise by the Solenoid guiding the original to the Inverting Feed Roller (2135). The Duplex 2 Guide moves only once, in the direction according to whether a single or double-side scanning is selected (Copier or Fax) before the Start button is pressed. It will remain in this position until a different operation is performed (i.e. if the last operation was 2-sided scanning, a single-side scanning is performed).

#### 2. Scanning the Front and the Back Side of an Original

The scanning of the Front and Back side of a 2-sided original is accomplished by means of the Duplex 2 Guide (2138) and Inverting 1 Guide (2139).

After the Front side of the original is scanned, the original is transported through the Duplex 2 Guide, through the Inverting 1 Guide (2139) that was rotated counter-clockwise by the Solenoid and is carried beyond the Inverting Feed Roller (2135) and upper Pinch Rollers (653) into the Sub Tray (1910).

The original is carried for a specified period of time after the trailing edge of the original triggers the Duplex Eject Sensor (604) and stops within 10 to 20 mm from exiting the rollers.

Then, the Inverting 1 Guide is rotated clockwise by the Solenoid and the reverse rotation of the ADF Motor pulls the original back around the Feed 2 Roller (2034) and proceeds to scan the Back side of the original.

After the Back side is scanned, the original is transported through the Duplex 2 Guide, through the Inverting 1 Guide and is carried beyond the Inverting Feed Roller and lower Pinch Rollers (653) this time, into the Sub Tray, again stopping 10 to 20 mm from exiting the rollers.

#### 3. Eject by Reverse Rotation

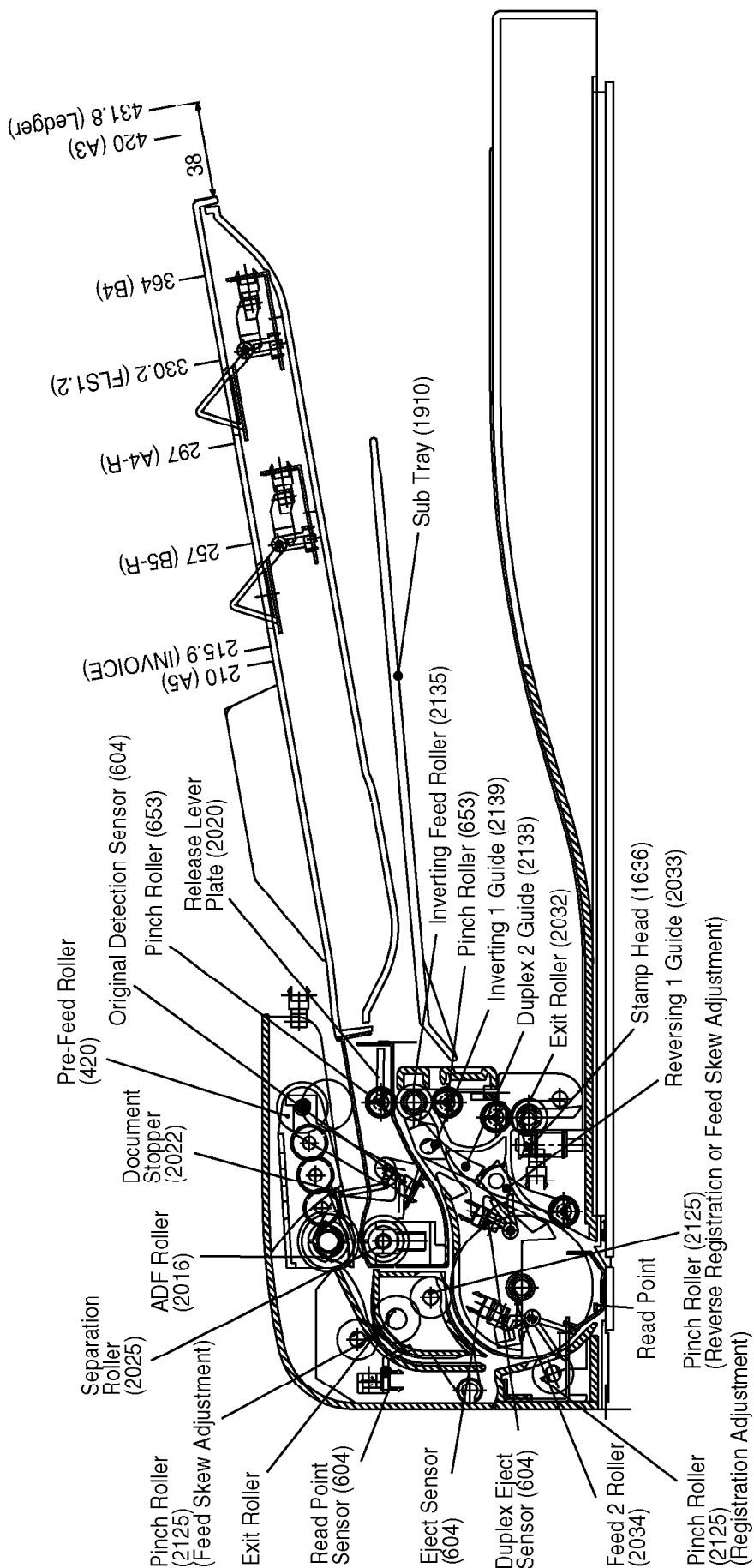
For the originals to stack properly, the above process repeats one more time. The Inverting 1 Guide is rotated clockwise by the Solenoid and the reverse rotation of the ADF Motor pulls the original back around the Feed 2 Roller, however, this time the original is routed to the Exit Roller (2032) and exits into the ADF Base.

#### 4. Sub Tray

The Inverting ADF system includes a Sub Tray (1910), which supports the originals during the ejection mode of the double-side scanning operation.

The Release Lever Plate grasps the originals and prevents them from being ejected into the Sub Tray.

## Inverting Automatic Document Feeder

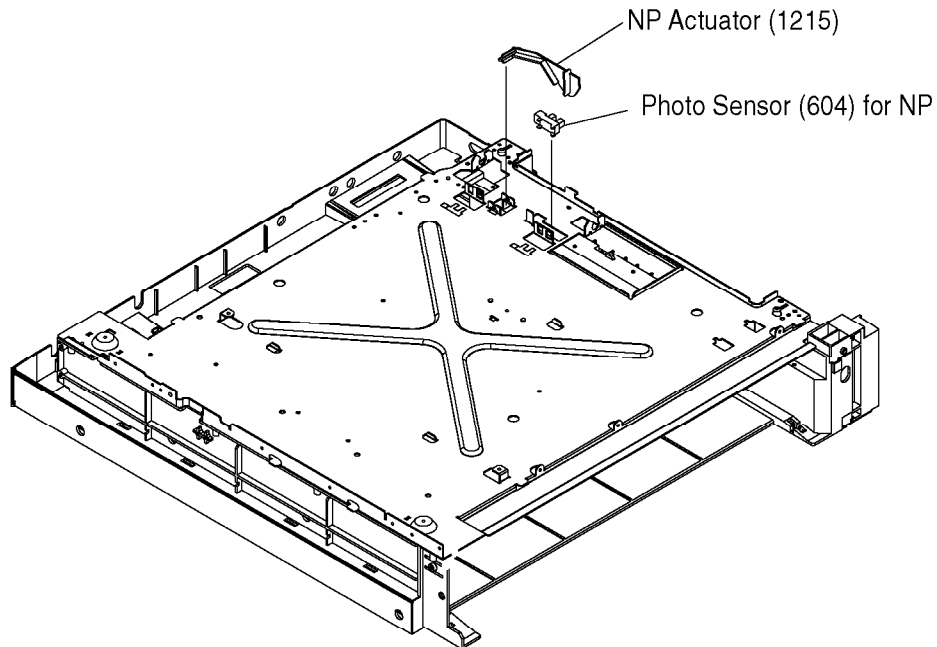


## 6.4. Receive Mechanism

### 6.4.1. Paper Feed Modules

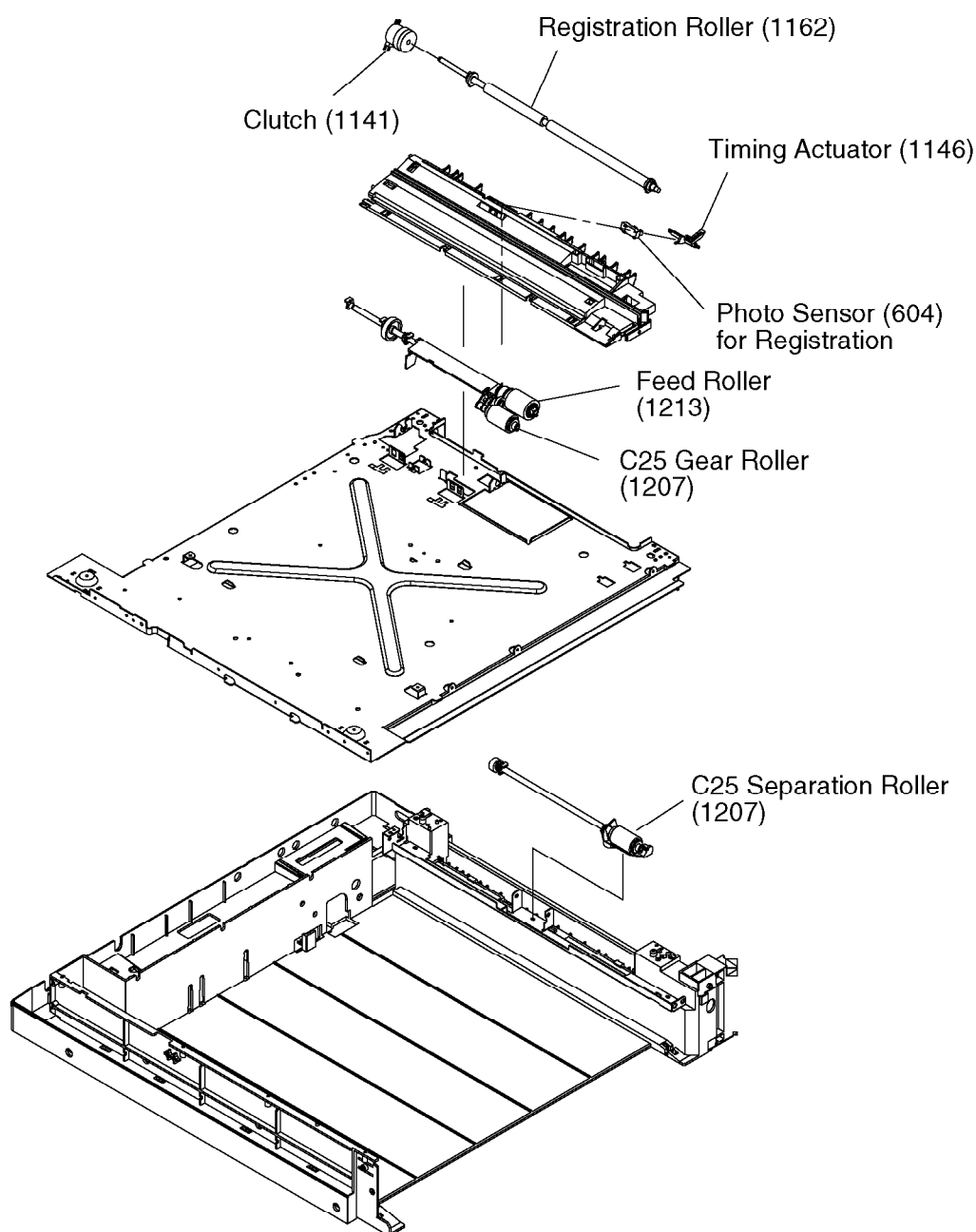
#### 1. Paper Feed Module

##### < NP Sensor Operation >



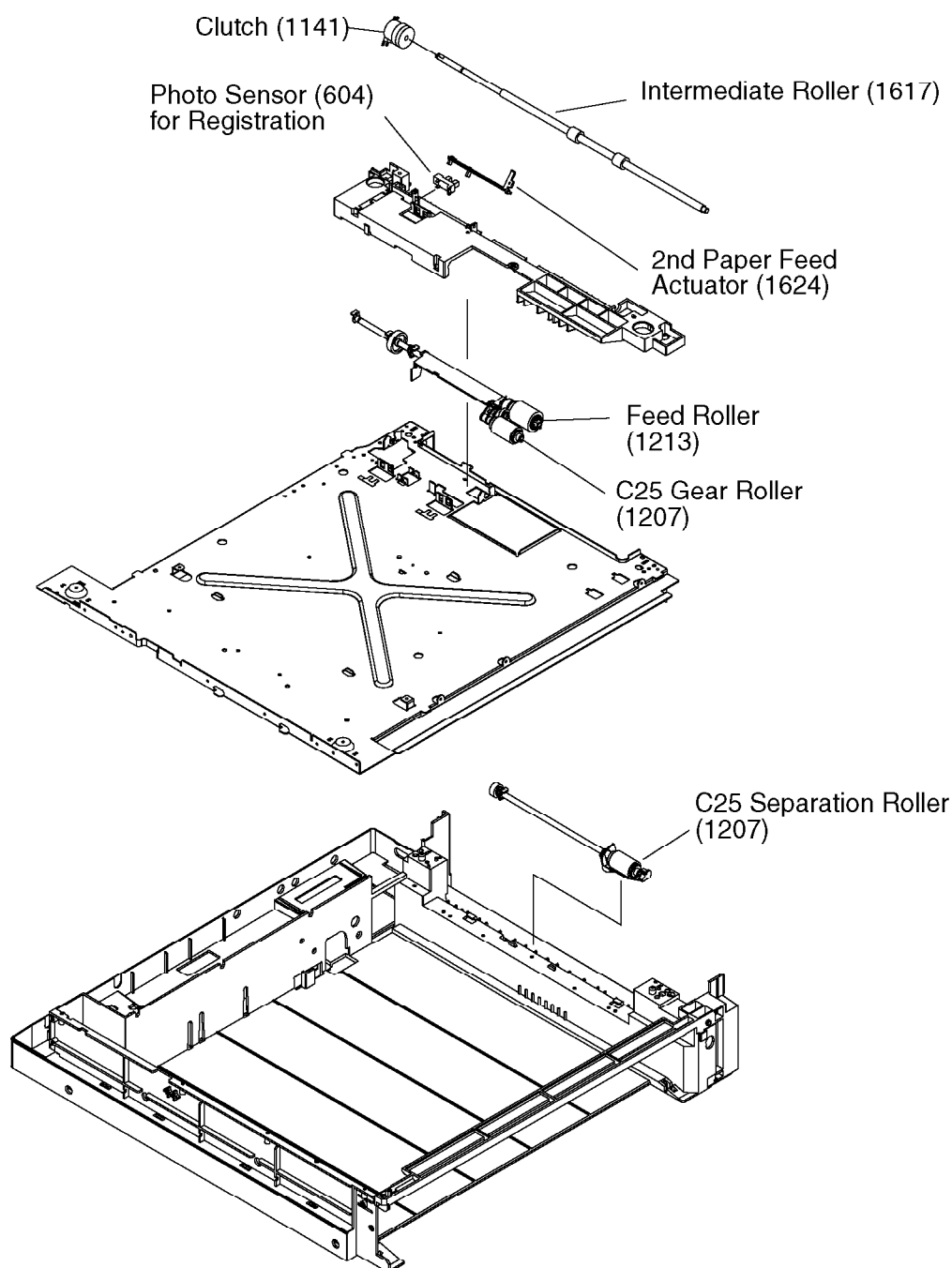
- a. The NP Actuators (1215) attached to the Paper Feed Block determine if there is Recording Paper in the Recording Paper Tray.
- b. The Recording Paper in the Recording Paper Tray lifts up the NP Actuator, allowing the light from the LED to actuate the Photo Sensor (604) for NP.

## < Paper Feed Module Operation >



- When the printing operation begins, the Drive Motor (1105) starts driving the Gears.
- The Clutch (1224) is energized for a specified period of time and turns ON. This activates the Feed Roller (1213). The Recording Paper is separated into individual sheets by the C25 Separation Roller (1207) and is transported.
- The Recording Paper is transported to the Registration Roller (1162), activating the Photo Sensor (604) for Registration. After a specified period of time, the Clutch (1141) is turned ON and the Registration Roller (1162) and the Registration Pinch Roller start rotating. The Recording Paper is transported to the OPC drum area.
- The Recording Paper passes through the Photo Sensor (604) for Read Point and after a specified period of time, the Clutch (1224) is turned OFF. The Registration Roller and the Registration Pinch Roller stop rotating.

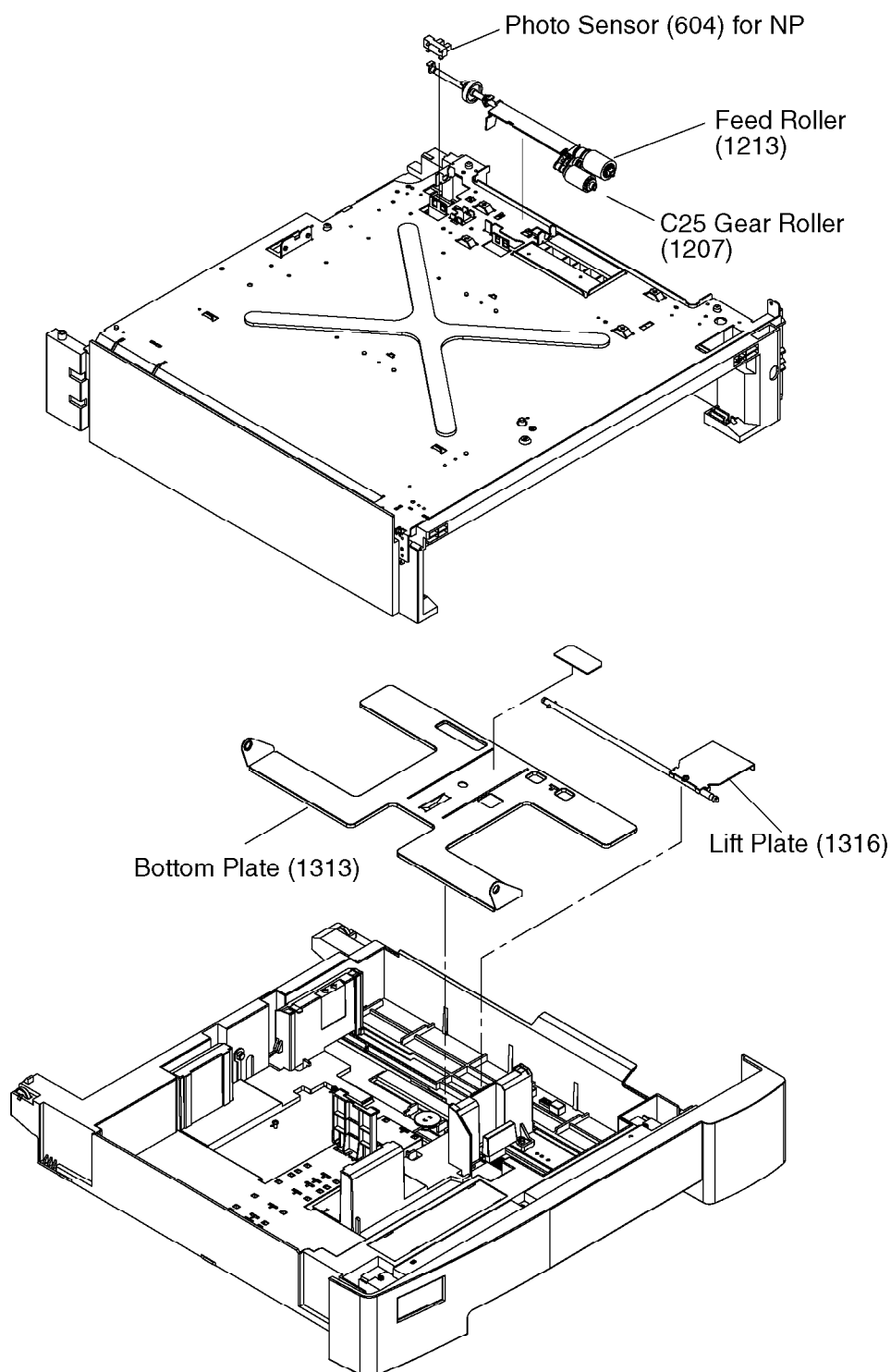
## < Paper Feed Module (Optional) Operation >



- When the printing operation begins, the Drive Motor (1105) starts driving the Gears.
- The Clutch (1224) is energized for a specified period of time and turns ON. This activates the Feed Roller (1213). The recording paper is separated into individual sheets by the C25 Separation Roller (1207) and transported by the Intermediate Roller (1617).
- The Recording Paper is transported to the Registration Roller (1162), activating the Photo Sensor (604) for Registration. After a specified period of time, the Clutch (1141) is turned ON and the Registration Roller (1162) starts rotating. The recording paper is transported to the OPC drum area.
- The Recording Paper passes through the Photo Sensor (604) for Registration and after a specified period of time, the Clutch (1141) is turned OFF. The Registration Roller and the Registration Pinch Roller stop rotating.

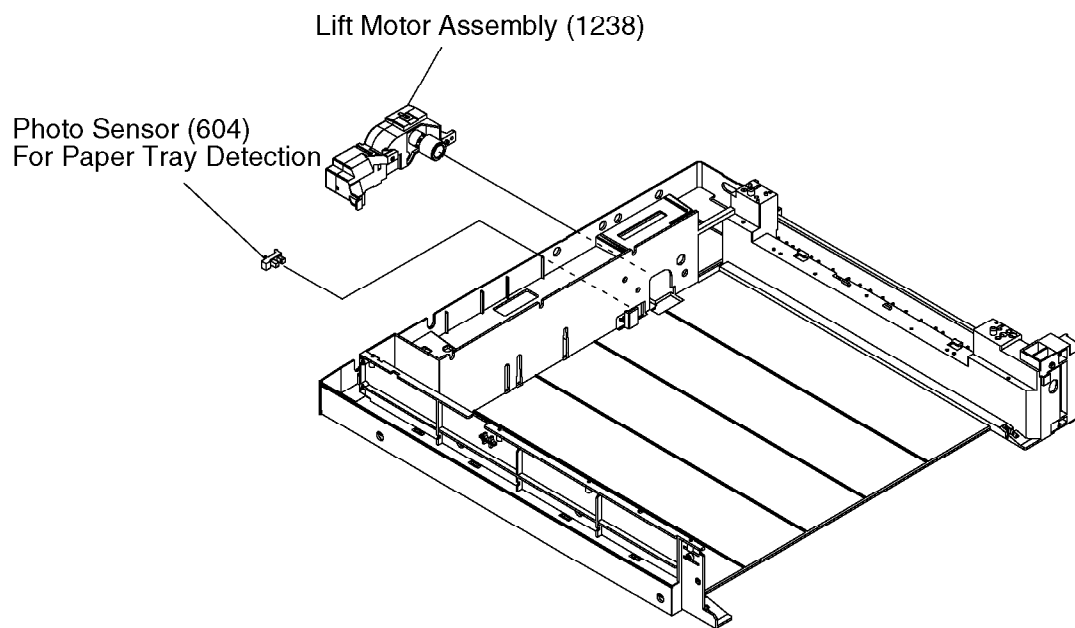


# < Paper Feed Module Lift up Mechanism >



- a. When inserting the Paper Tray into the machine, the Photo Sensor (604) for NP activates. At the same time, the Lift Plate (1316) is combined with the coupling which drives the Lift Plate of the machine. The Lift Plate rotates, lifting the Bottom Plate (1313) and the Recording Paper.
- b. Once the Bottom Plate and the Recording Paper are raised, the Photo Sensor (604) for NP is turned ON. The Lift Motor (1229) stops rotating, maintaining the Recording Paper at the certain level.

### < Paper Feed Module Recording Paper Size Setting >



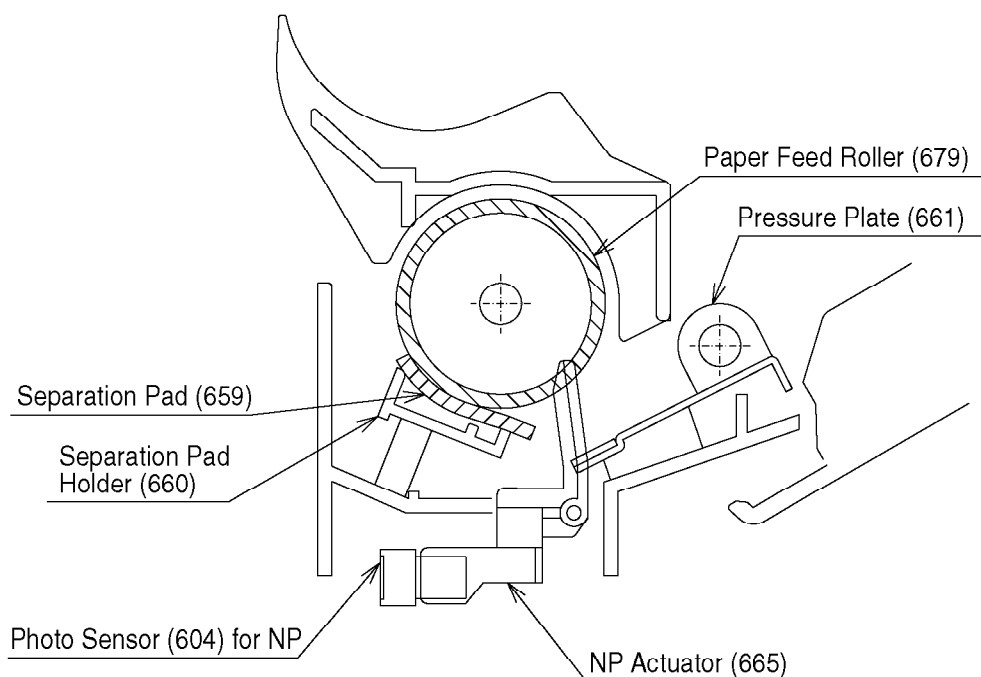
- a. The Recording Paper size in the Paper Feed Module is set on the Control Panel.

## 2. Sheet Bypass

### < NP Sensor Operation >

- a. The NP Actuator attached to the Paper Feed Unit determines if there is Recording Paper in the paper tray.
- b. The Recording Paper in the paper tray lowers the NP Actuator and the Photo Sensor (604) for NP actuates.

### < Sheet Bypass Operation >



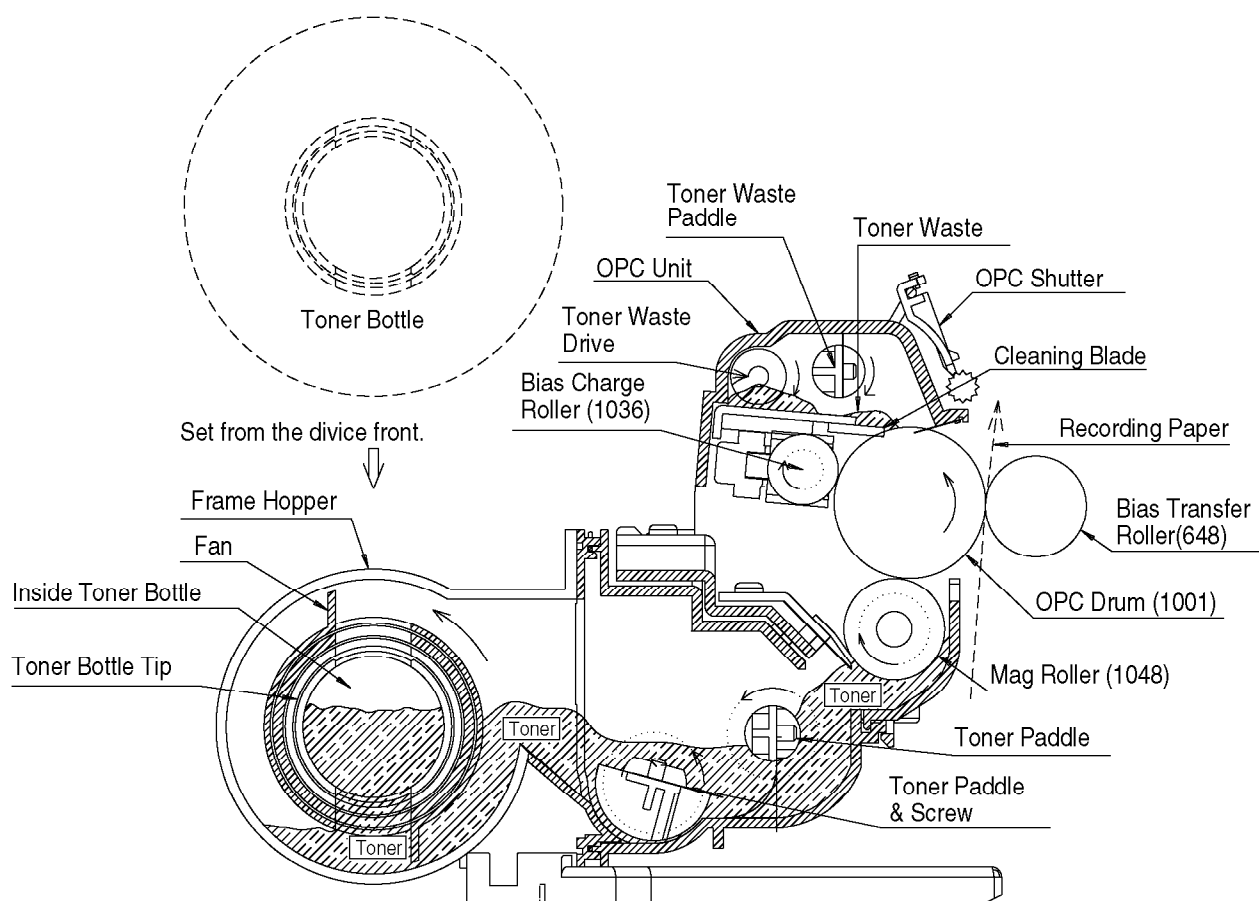
- a. When the printing operation begins, the PRINT (Print Request Signal) turns On and the Drive Motor (1105) starts driving the Gears.
- b. After a specified period of time, the Solenoid is turned ON and the Clutch (1141) is energized to activate the Paper Feed Roller (679) and the Cam. The Recording Paper is raised by the Pressure Plate (661) and transported to the Separation Pad (659). The Recording Paper is separated into individual sheets by the Separator Pad Holder (660).
- c. The Recording Paper is transported to the Registration Roller (1162), activating the Photo Sensor (604) for Registration.
- d. After a specified period of time, the Clutch (1141) is turned ON and the Registration Roller (1162) and the Registration Pinch Roller start rotating. The Recording Paper is transported to the OPC drum direction.
- e. After the trailing edge of the paper passes the Photo Sensor (604) for Registration and after a specified period of time, the Clutch (1141) is turned OFF. The Registration Roller and the Registration Pinch Roller stop rotating.

## 6.4.2. Printing Process Operation

The Printing Process Operation consists of Process Unit and Toner Bottle with Toner supplied. Toner is supplied to the Process Unit using gravity.

The Process Unit includes the Toner Paddle and Mag Roller (1048) that supplies Toner to the OPC Drum (1001).

The Cleaning Blade is attached to the OPC Unit. The Cleaning Blade scrapes the OPC Drum surface to remove the excess toner on the surface of the OPC Drum into the Toner Waste Chamber. The removed toner is moved into the Toner Waste Container by means of Toner Waste Paddle and Toner Waste Drive.



## Process Unit

### Charge

In the dark, the Bias Charge Roller (1036) applies a high, uniform negative charge to the surface of the OPC Drum. The surface potential is approximately -560 VDC and remains because the drum has a high electric resistance in the dark.

## Exposure

A portion of the laser beam is deflected to the timing sensor [Beam Detection (BD) Sensor], which controls the start timing of scanning on the OPC Drum. The CPU also uses the timing sensor to detect abnormal signals. The light beam from the laser diode is modulated by the digital signal and converted to parallel light waves by the collimator lens. The beam is then directed to the rotating polygon mirror, where it is reflected to the f- $\theta$  lens and then focused onto the OPC Drum surface. The laser beam moves across the surface of the OPC Drum in the scanning direction. Where the laser beam is applied, the negative charge on the drum dissipates, and where the laser is not applied, the negative charge remains. This action forms a latent, electrostatic image on the OPC Drum, corresponding to the original image.

## Development

This development process uses a conventional method, where toner coats a Mag Roller and transfers to the latent image on the OPC Drum. In the Process Unit, the (mono-component) toner is negatively charged by the friction between the rotating Mag Roller (1036) and the Dr. Blade Assembly (1040). This combination and the rotation of the Mixing Blade transfers the toner from the reservoir and forms a brush effect on the Mag roller. Where the magnetic brush lightly touches the OPC Drum, the negatively charged toner is attracted to the latent image on the drum, forming a mirror image of the original on the drum. Any remaining toner is removed from the Mag Roller by the Dr. Blade and is recycled back into the toner reservoir. A bias voltage of approximately 1.65 kVACp-p at 1.8 kHz, riding on a -430 VDC bias is applied to the magnetic brush to achieve maximum print quality.

## Transfer and Separation

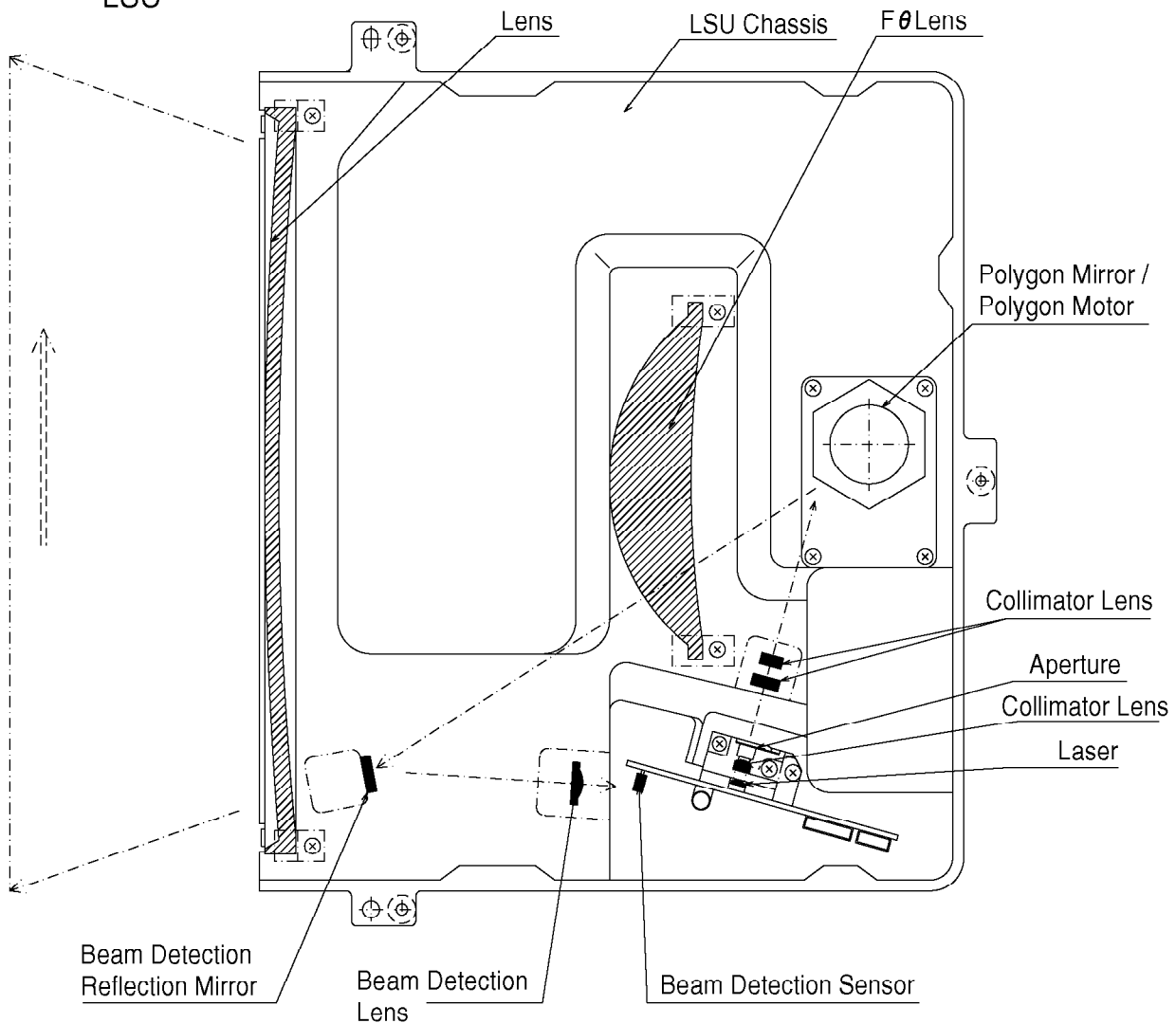
As the paper is fed between the OPC Drum and the Bias Transfer Roller (BTR) (648), a positive charge of approximately +1400 VDC (+10  $\mu$ A steady current) is applied to the backside of the paper by the BTR. The toner particles are attracted away from the drum towards the surface of the paper. During cleaning, the BTR is charged to approximately -800 VDC to repel toner on the OPC Drum and prevent toner from being attracted to the BTR. After transfer has occurred, the paper passes over the Discharge Plate 3 (655) in the Transfer Guide Assembly, reducing the difference of potential between the OPC Drum and the paper. The stiffness of the paper causes the paper to separate from the drum.

## Cleaning

After transfer, some toner may remain on the surface of the OPC Drum. A Cleaning Blade scrapes the OPC Drum surface, and the removed toner is moved into the Toner Waste Container, outside the Process Unit.

### 6.4.3. Laser Unit

#### LSU



#### 1. Laser

This Laser uses the semiconductor laser. The beam power on the drum surface is approximately 0.20 mW.

#### 2. Collimator Lens

This lens converges and focuses the laser beam, converting it to parallel light.

#### 3. Aperture

This controls the size of the laser beam.

#### 4. Polygon Mirror and Polygon Motor

The polygon scanner consists of a 6-sided mirror, directly driven by a DC motor, revolving at 24,000 rpm. The laser beam is reflected against these mirrors and swept over the recorded width in the scanning direction.

#### 5. Beam Detection (BD) Lens and Beam Detection (BD) Sensor

The BD Lens receives the reflected light from the Polygon Mirror and redirects it into the BD Sensor, which converts the laser beam into electrical signals and sets the start timing for the scanning line.

#### 6. F-θ Lens

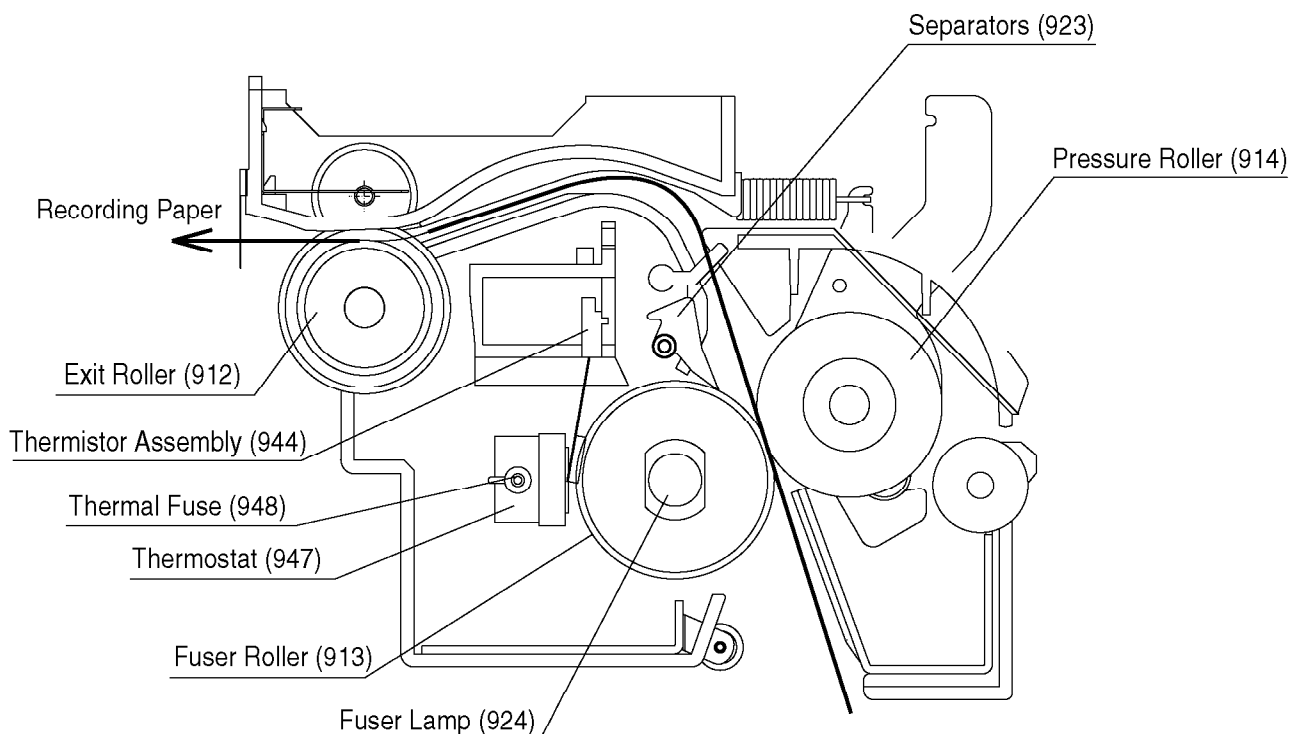
This amorphous plastic, molded lens is designed to provide parallel laser light across the surface of the drum, providing a constant scanning speed.

#### 7. Lens

This corrects the skew of each side on the Polygon Mirror.

#### 6.4.4. Fuser Operation

The Recording Paper passes through the Fuser Roller (913) and is subjected to heat and pressure in the Fuser Unit. Pressure between the Fuser Roller (913) and Pressure Roller (914) fuses or bonds the toner into the paper.



##### **Fuser Roller (913)**

A Teflon coated roller supplies heat for bonding the toner to the paper. The temperature of the surface is kept constant at approximately 178°C ( $\pm 10^\circ\text{C}$ ) (or 352°F).

##### **Fuser Lamp (924)**

Located in the Fuser Roller (913) are Fuser Lamp (924) that serve as the heat source for the Fuser Roller (913).

##### **Thermistor Assembly (944)**

A heat sensitive resistor, in contact with the Fuser Roller (913), monitors the surface temperature and keeps the temperature at the specified level by controlling the Fuser Lamp (924).

##### **Thermostat (947) and Thermal Fuse (948)**

The Thermostat (947) and the Thermal Fuse (948) are installed in the Fuser Roller (913), providing an extra overheat protection.

##### **Drive Motor (1105)**

The Drive Motor (1105) provides the driving force to the Fuser Roller (913) through the Fuser Roller Gears.

##### **Pressure Roller (914)**

This converted PFA tube Silicon Rubber Roller applies pressure to the Fuser Roller, assisting in bonding the toner to the paper.

**Separators (923)**

Five Separators (923) are installed in the Fuser Roller (913). This prevents the recording paper from wrapping around the Fuser Roller (913), causing a paper jam.

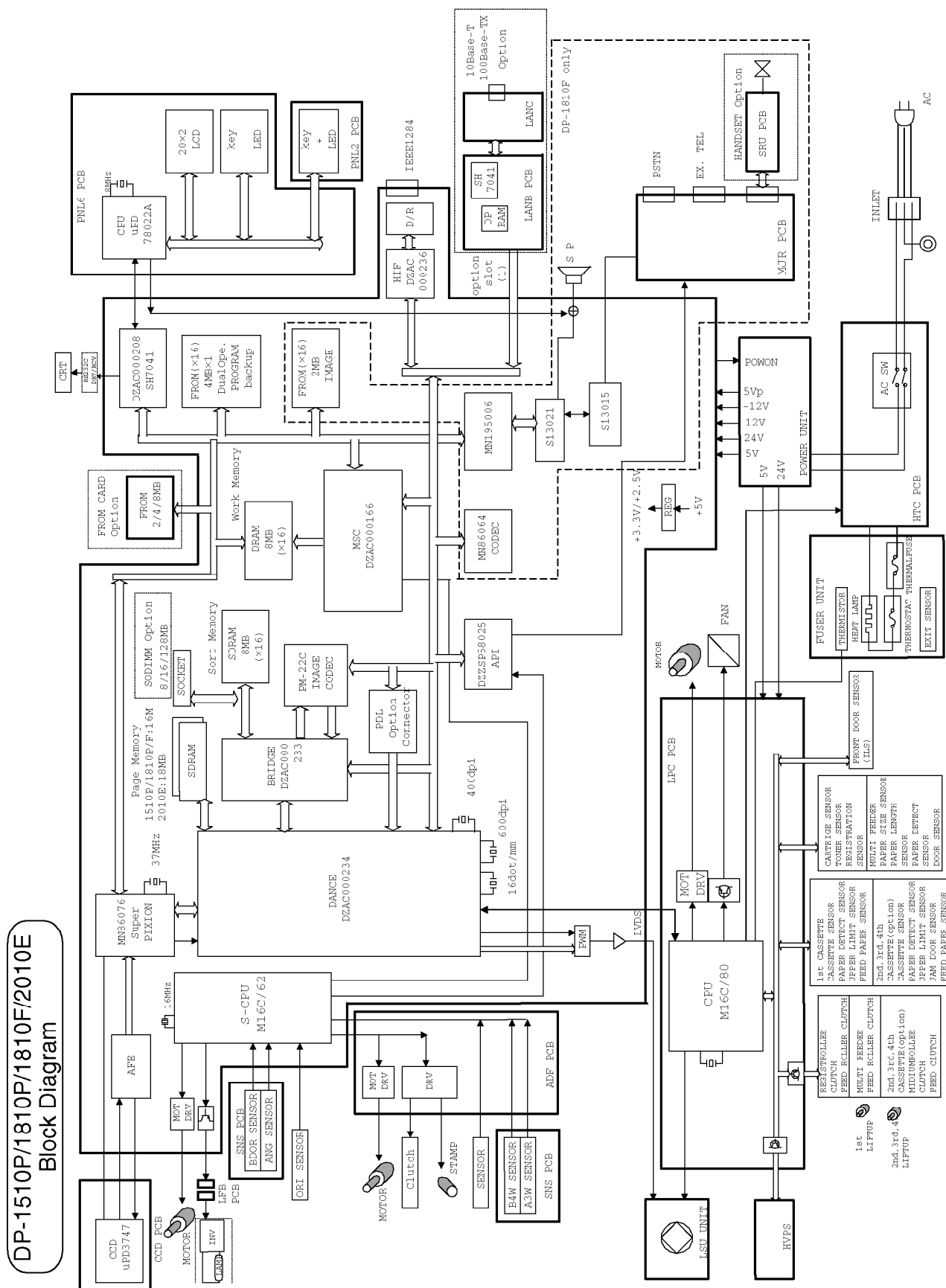
When the Fuser Unit does not reach the specified temperature within a certain period of time, an Error code is shown on the display, stopping the operation.

When the Thermistor Assembly (944) is disconnected or the surface temperature of the Fuser Roller (913) is out of limit, an Error code is shown on the display, stopping the operation.



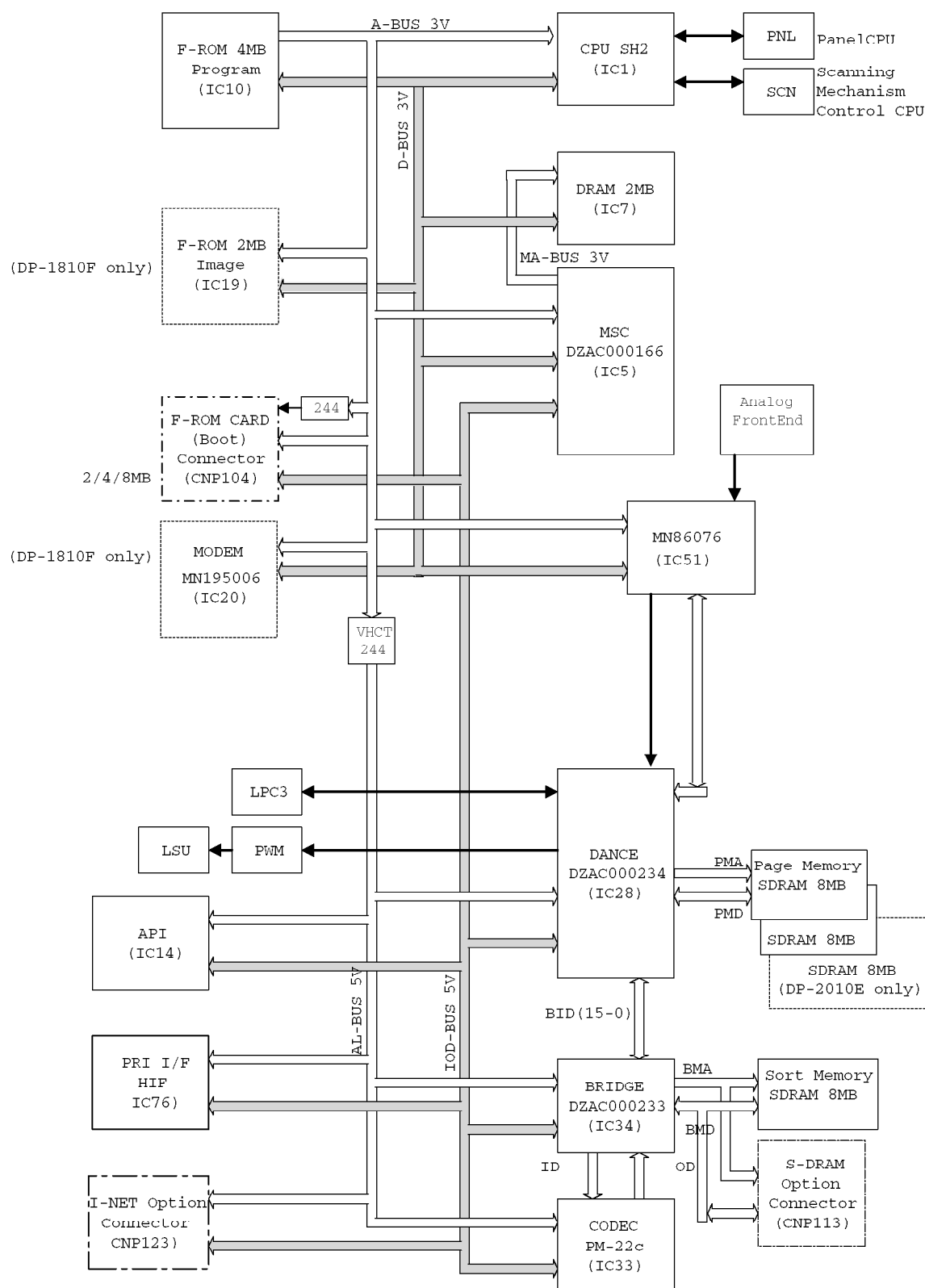
## 6.5. Electrical Circuit Explanation

### 6.5.1. Block Diagram



## 6.5.2. System Control Circuit

The System Control Block consists of the following IC that control the general functions.



## 1. System CPU

The System CPU (SH7041) is a 32-bit RISC (Reduced Instruction Set Computer) type of CPU and DMA Control, Serial Communication Port, Timer Control, Interrupt Control, DRAM Control, and I/O Port are integrated into 1 chip. Mask ROM (64k byte) is already installed and it controls the Monitor, High Speed managing Task and Boot Programming.

- **Serial Communication Port**

It has a 2ch Serial Communication Port and is used to interface the following devices.

CPU  $\longleftrightarrow$  Panel Unit (Panel CPU)

CPU  $\longleftrightarrow$  Sub CPU for scanning (M16C/162)

- **Timer Control**

It is used to program the standard timer.

- **Interrupt Control**

It controls receipt & transfer to CPU the interrupt from MSC, Option, etc.

- **DRAM Control**

It generates DRAM Control Signal and Refresh Control when the power is ON.

- **I/O Port**

It is used to control lines and reset control around LSI.

## 2. System Control Gate Array (MSC)

DZAC000166 (MSC) is a System Control Gate Array and provides the CPU peripheral function.

- **DMA Control**

It has a 4ch DMA Control and is used to transfer data between the following devices.

Printer Interface  $\longleftrightarrow$  Image Data Memory (DRAM)

- **Interrupt Control**

It controls receipt & transfer to CPU the interrupt from CODEC and LSI, etc.

- **DRAM Control**

It selects DRAM Control Signal and generates Control Signal when transferring DMA.

- **BUS Control**

Data control between System BUS (+3.3V) and I/O BUS (+5V)

- **Address Decoder Control**

It generates Chip select signal of peripheral LSI.

## 3. System Memory

This system consists of the following memory.

- **F-ROM (IC10)  $\rightarrow$  F-ROM (4MB)** for programming

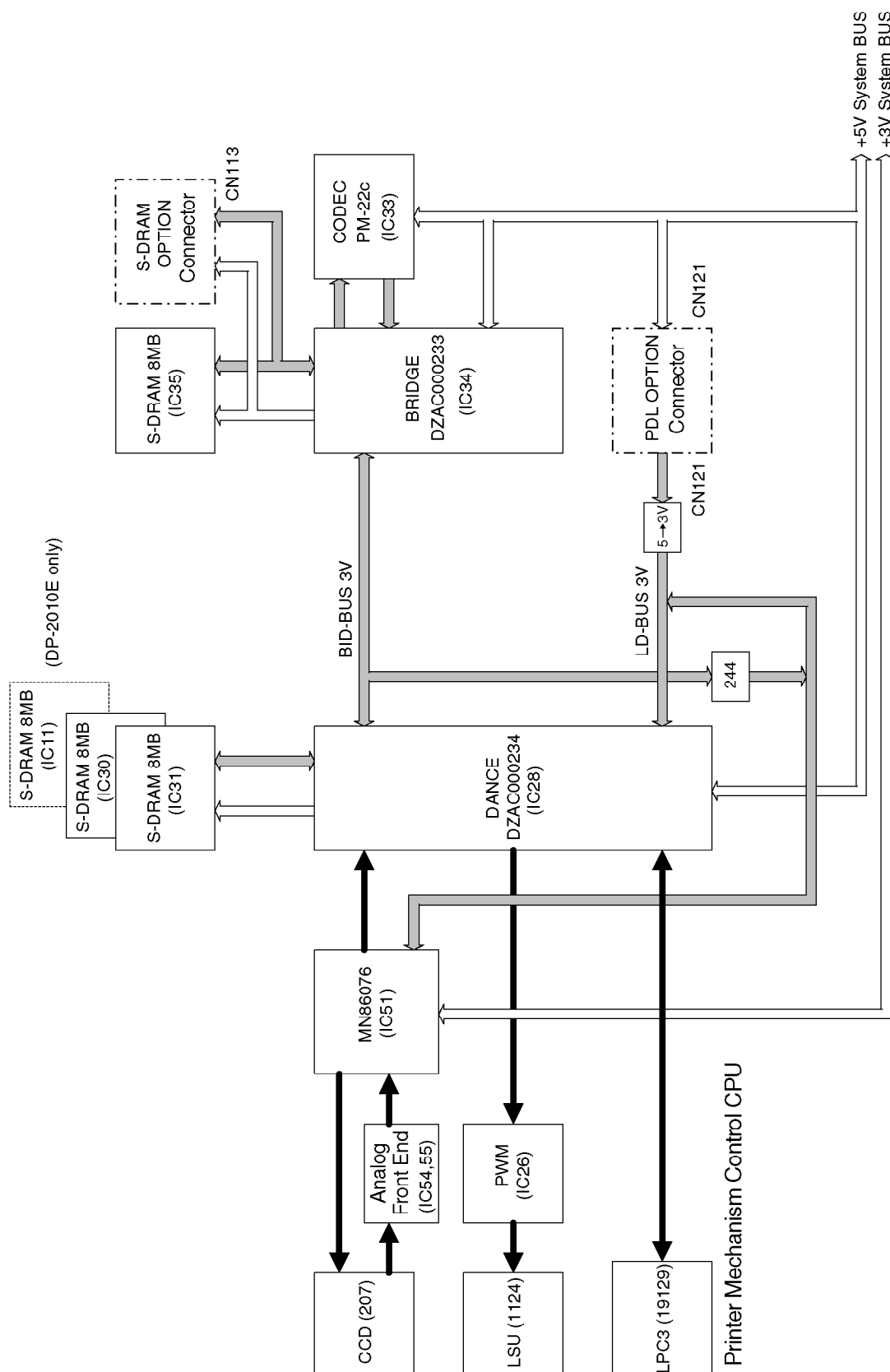
The program is booted from F-ROM Card or Parallel Port Interface.

- **DRAM (IC7)  $\rightarrow$  Work RAM**

- **F-ROM (IC19)  $\rightarrow$  F-ROM (2MB)** for image (DP-1810F only).

### 6.5.3. Image Data Circuit

The Image Data Circuit is independent of System circuit from Page Memory / Sort Memory circuit due to high speed scanning and printing. As a result of this, all image data is managed by the Image Data circuit and only coded data is transferred to the System Data BUS.



## 1. Document Adaptor for New Copier Engine (Gate Array)

DZAC000234 (DANCE) is a Document Adaptor for New Copier Engine (Gate Array) and provides the Image Control peripheral function and Recording Data Control.

### • DMA Control

It is used to transfer data between the following devices.

Scanning Control LSI (MN86076)	→	Page Memory (S-DRAM)	:	Scanning Route
Page Memory (S-DRAM)	→	Sort Memory Control Gate Array (BRIDGE)	:	Coding Route
Sort Memory Control Gate Array (BRIDGE)	→	Page Memory (S-DRAM)	:	Decoding Route
Page Memory (S-DRAM)	→	PMW Control LSI (LP)	:	Recording Route
System Memory (DRAM)	→	Page Memory	:	Report Route

### • Rotation Management

The rotation is carried out by the hardware when transferring the route.

Page Memory (S-DRAM)	→	CODEC for Image (PM-22c)	:	Rotation (Send)
Page Memory (S-DRAM)	→	PMW Control LSI (LP)	:	Copy, Rotation (Receive)

### • S-DRAM Control

It generates S-DRAM Control Signal for Page memory and Refresh Control when the power is ON. It does not backup the Page Memory.

### • PDL Data Transfer

When installing the PDL Option, the actual coded data is retrieved on the PDL side first and is transferred to Page Memory (S-DRAM). Then, the coded data is transferred to the PDL Option on the System side.

### • Binary Gray Scale Conversion

The signal of a binary-level image such as copying is converted into a multiple-value (256-scale) image signal. The signal is transferred to an external PWM control LSI for multiple-value recording. A maximum of 7-by-7 pixels around an area is referred to in layers for conversion into multiple-value signal.

### • Gray-Level Enhancement

This control function allows expressing higher-level scales than using a recorded signal, by reducing line density into 1/2 or 1/3 on the original after binary-to-multiple value conversion. This capability increases reproduction of gray scale images such as photographs.

### • Laser Pulse Width Control

After smoothing, the IPC controls Laser pulse width by the software setting of the print quality.

### • Image Range Isolation Circuit

It identifies the halftone picture range and controls smoothing, Binary Gray Scale Conversion, and Laser pulse width control to eliminate blotching of the recording picture which has undergone error diffusion or other process.

- **Synchronization Control Circuit**

This circuit is used to synchronize the output of the recorded data with the horizontal synchronizing output signal from the printer for each line. The IPC controls the resolution of the printer as follows.

16 dot/mm x 15.4 line/mm	:	Report data
15.4 dot/mm x 16 line/mm	:	Report rotation recording data
600 dpi x 600 dpi	:	Copy, Printer Interface & PDL Interface

- **FIFO/S-RAM Control**

Picture Edit Coding Gate Array uses FIFO for Smoothing & Laser pulse width control, and S-RAM for Smoothing Data and interface controls.

- **Serial Communication Port for LP Interface**

It provides 1ch Serial Communication Port interface for the Printer Mechanical CPU.

## 2. SORT Memory Control Gate Array

BRIDGE (DZAC000233) is a SORT Memory Control Gate Array and provides the data transfer control function between Sort Memory Control, DANCE, CODEC for Image, and System.

- **DMA Control**

It is used to transfer the following data.

Picture Edit/Recording Gate Array (DANCE)	↔	CODEC for Image (PM-22c)	:	Bus Selection
CODEC for Image (PM-22c)	↔	SORT Memory (S-DRAM)	:	Compress, Restore
SORT Memory (S-DRAM)	↔	System Memory (DRAM)	:	PC Scanning

- **S-DRAM Control**

It generates S-DRAM Control Signal for SORT Memory and Refresh Control when the power is ON. it does not backup the Page Memory.

## 3. PWM Control LSI

PM-1075 (IC26), which is a PWM control LSI, converts an 8-bit input digital signal into an analog signal with 256-scale pulse width. The conversion allows modulation of pulse width in recorded data, transferring the data to LSU, enabling multiple-value recording.

The pulse width is determined by the Picture Edit/Recording Gate Array (DANCE).

The function performs centering, reading, and trailing edge modulation in the pulse.

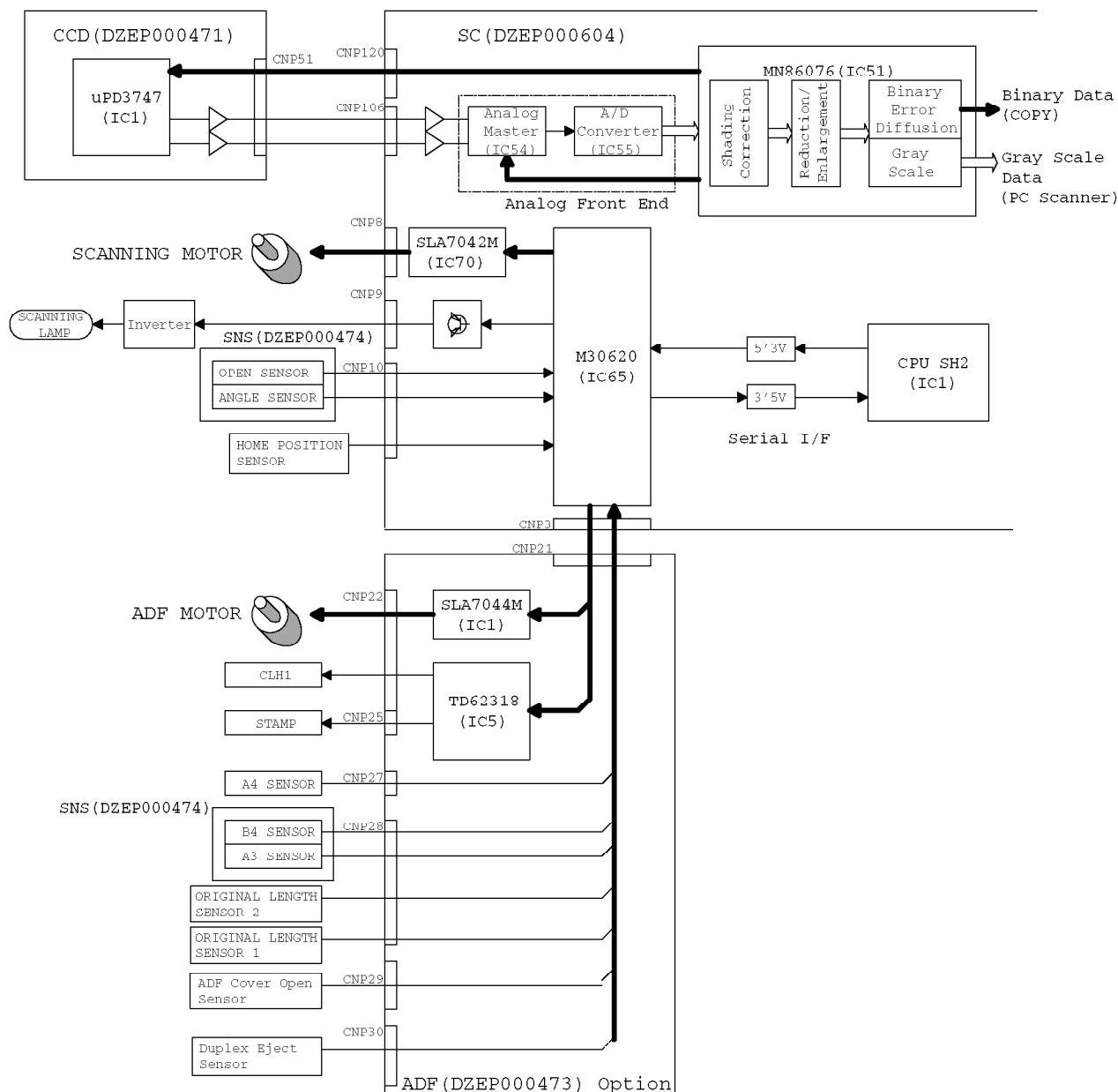
## 4. Optional Memory for Image Side

The Optional Memories are:

- **Memory PC Board (SODIMM) → DRAM Card (8/16/128 MB)** for Sort memory

Install the DRAM Card for Sort memory to CN151 on the SORT PCB.

## 6.5.4. Scanning Circuit



### 1. Scanning LSI

MN86076 (IC51) is a Scanning LSI and generates Shading Correction, MTF Correction, Reduction/Enlargement, and Gray Scale Error Diffusion. The Image Signal is converted to binary signal and transported.

### 2. Scanning Mechanism Control CPU

M30620 is a 16 bit type of CPU that controls scanning mechanism. It controls Scanning Motor, Scanning Lamp, Verification Stamp, Sensor Detection, and Solenoid Drive Control.

### 3. Scanning Motor Drive Circuit

Scanning Motor Drive Circuit is controlled by SLA7042M and SLA7044M (SC PCB IC70, ADF PCB IC1).

### 6.5.5. Coding

Coding and decoding (MH/MR/MMR/JBIG conversion) is carried out by the hardware codec device.

- **PM-22c (IC33) : for Image Codec**

It codes or decodes the data transferred from Sort memory. When copying, this codec codes from the Image data to JBIG data.

### 6.5.6. Option PC Board

1. LANB PC Board (DZEC102530 / DZEC102532) : LAN Communication  
(when the LANB PCB and LANC PCB (DZEC102310) are installed).

**Note:**

Auto-sensing 10/100Base-T Ethernet Interface.

2. EP PC Board (DZEC101696) : PDL Control PCB  
Prints Page Description Language (PDL) data.

**Note:**

PDL PCB must be installed in combination with LANB/PRIF PCB.

3. SDRM PC Board : SDRAM Memory PCB

Sort Memory	8 MB	:	DZEC101554
	16 MB	:	DZEC102306
	128 MB	:	DZEC102307



### 6.5.7. Sleep Mode

**Note:**

When the 10/100 Ethernet Interface / Internet Fax Kit is installed, the Sleep Mode is disabled.

This function reduces the power consumption in standby mode. During Sleep Mode, power is supplied only to the Energy Saver Lamp to keep it at a steady ON condition, and to the circuit that monitors it. The power is recovered the Energy Saver key is pressed.

#### Sleep Mode Availability

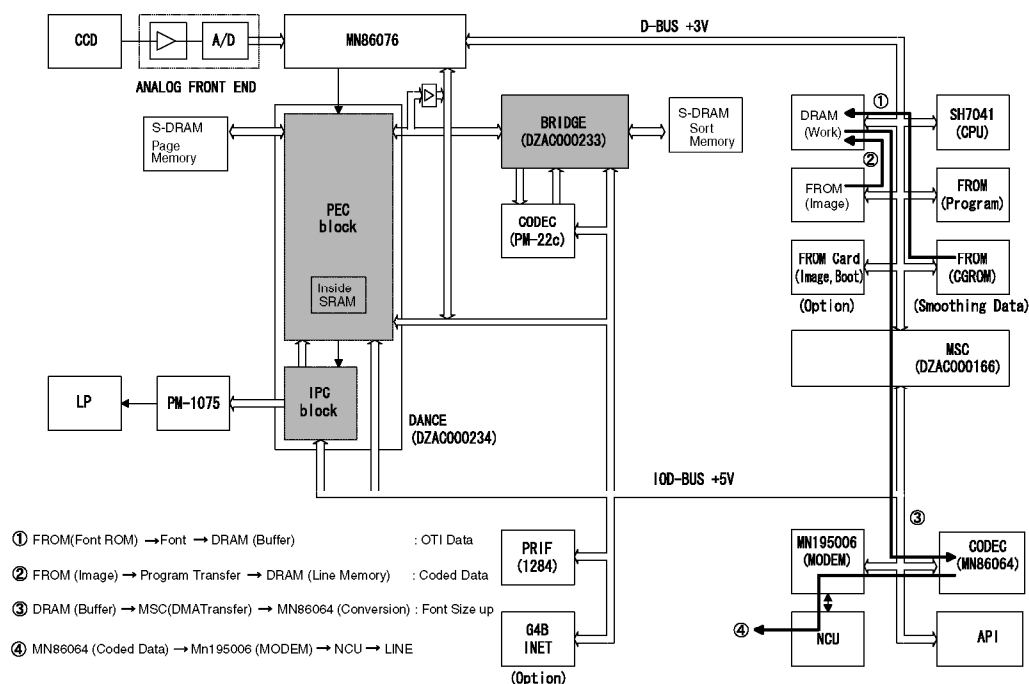
No.	Item	Sleep Mode	Remark
1	10/100 Ethernet Interface/Internet Fax Kit Option is installed	No	
2	When an ALARM Status indication is displayed	No	

#### Recovers from Sleep Mode

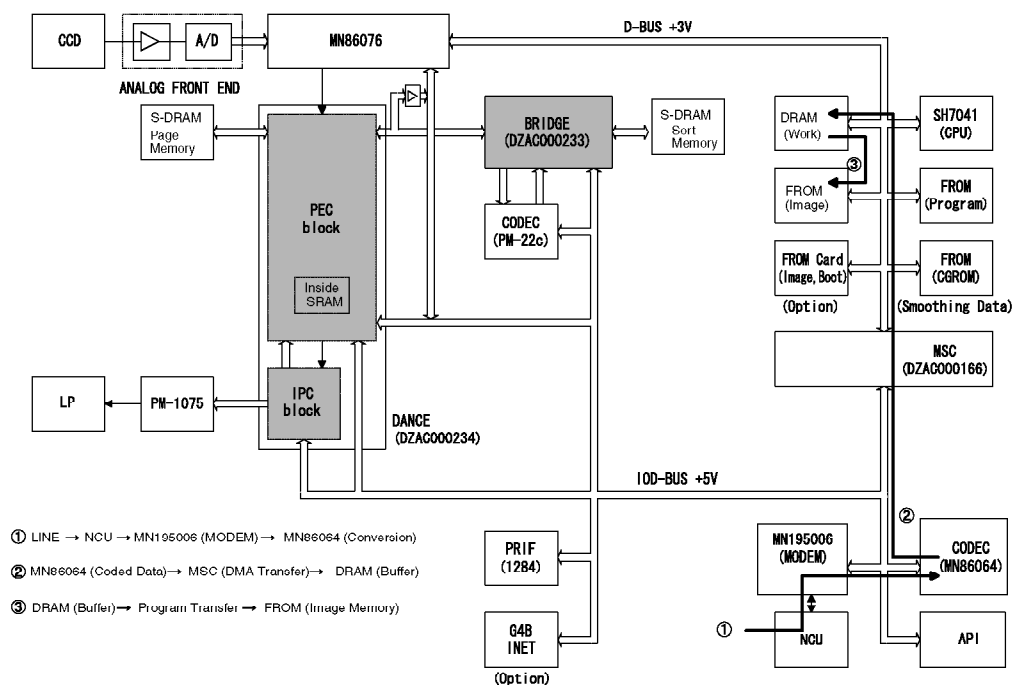
No.	Item	Recovers from Sleep Mode	Remark
1	When Energy Saver key is pressed	Yes	
2	Original Sensor is actuated	Yes	No Document Sensor with Flatbed (ADF option)
3	When printing from a PC	Yes	
4	Platen Cover Open	Yes	
5	Ringer Detect	Yes	DP-1810F only
6	External Telephone Off Hook	Yes	
7	Option Handset Off Hook	Yes	

## 6.5.8. Signal Routing

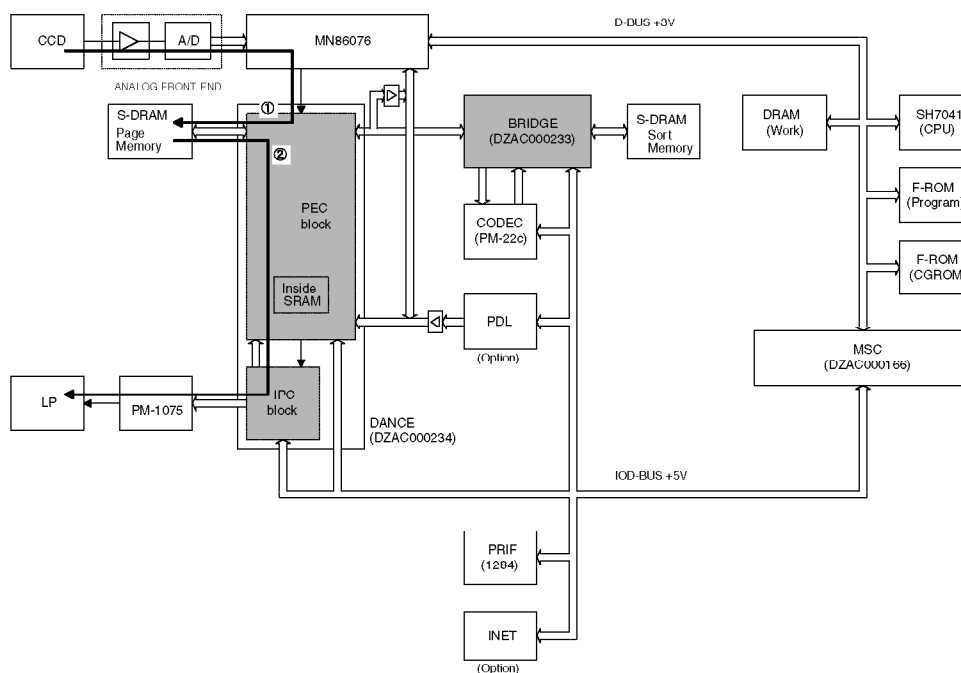
### 1. Memory Transmission (DP-1810F only)



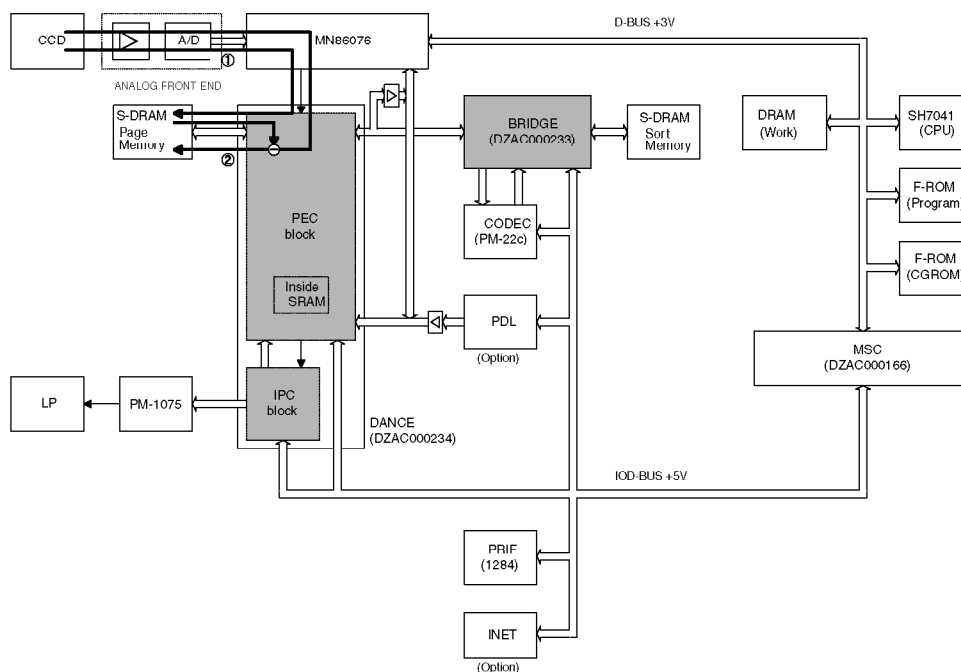
### 2. Memory Reception (DP-1810F only)



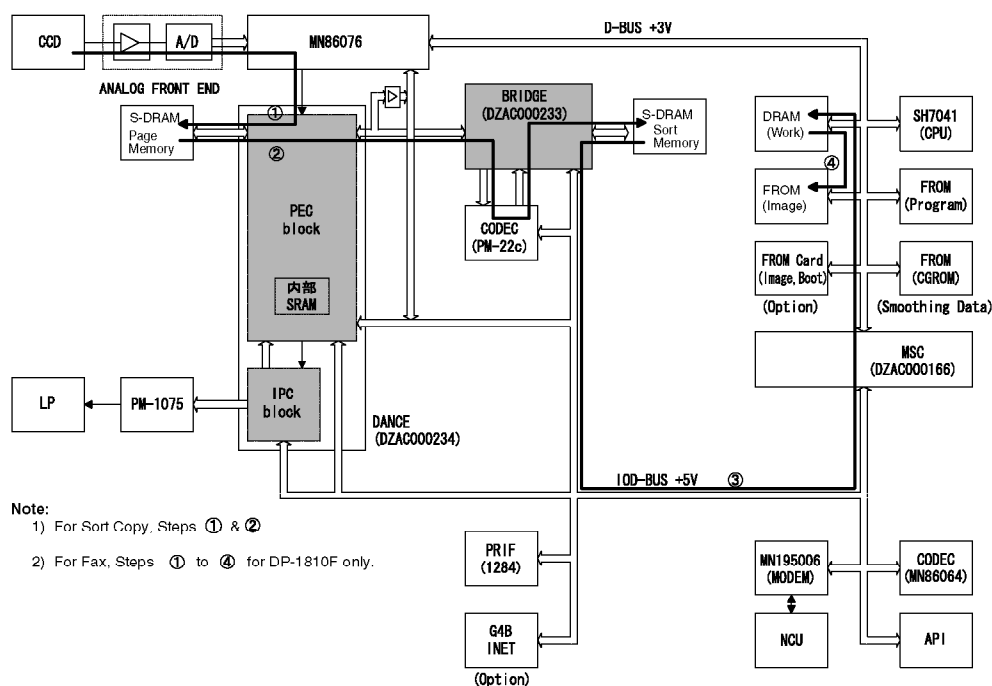
### 3. Copy



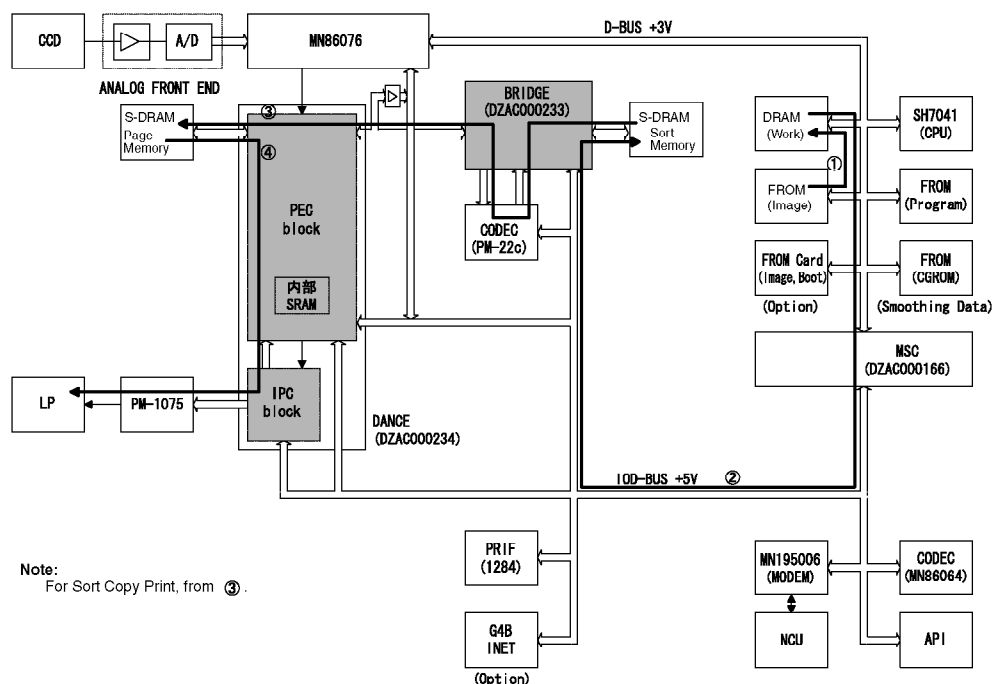
### 4. Skyshot



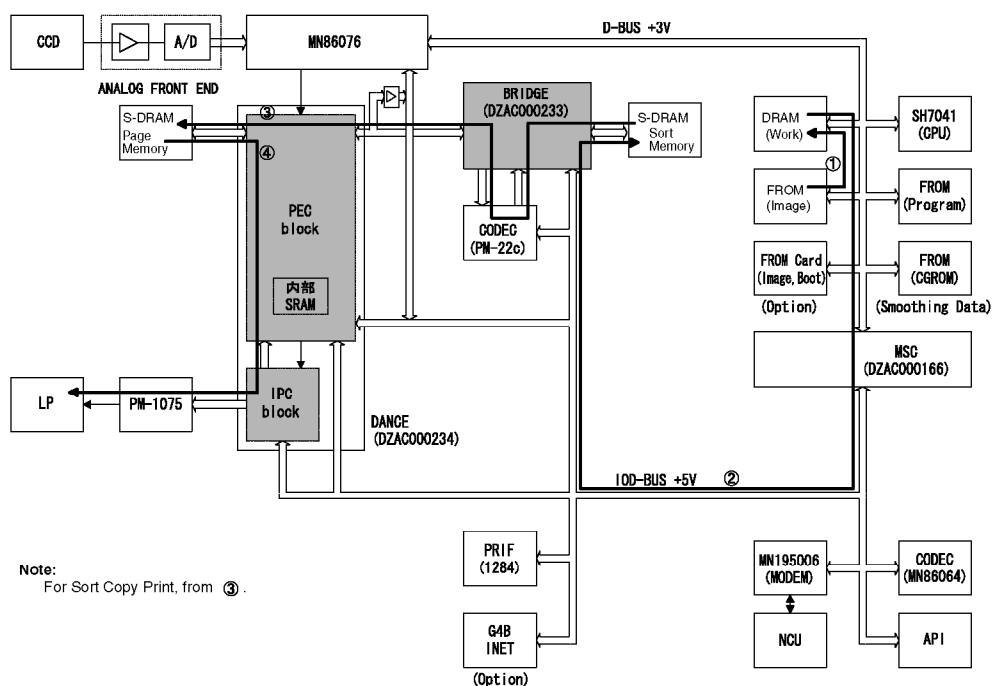
## 5. Scan into Memory



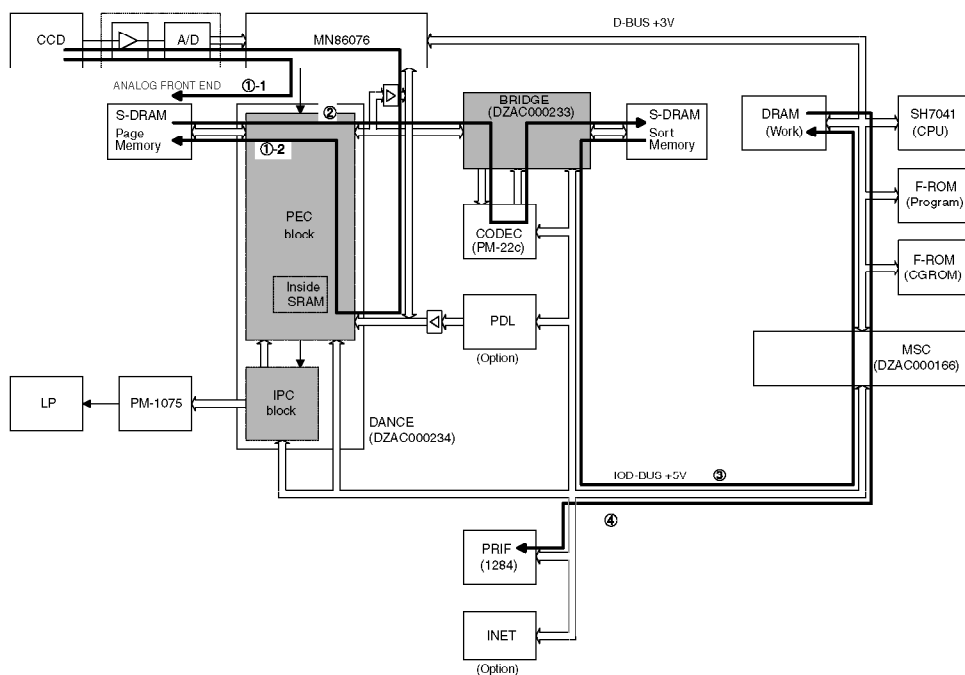
## 6. File Print from Memory



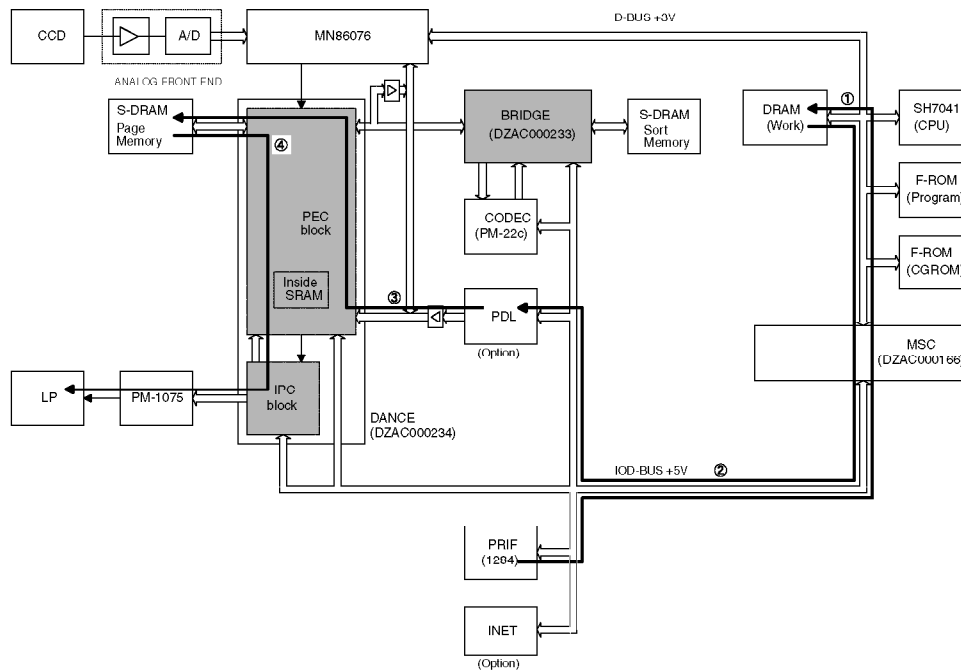
## 7. Report/List Printing



## 8. PC Scanning Mode (Binary/Gray Scale Scanning)



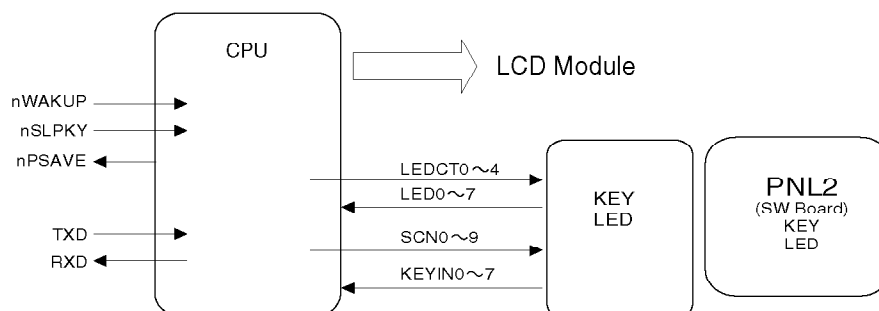
## 9. Printer I/F (PDL)



### 6.5.9. Panel PC Board

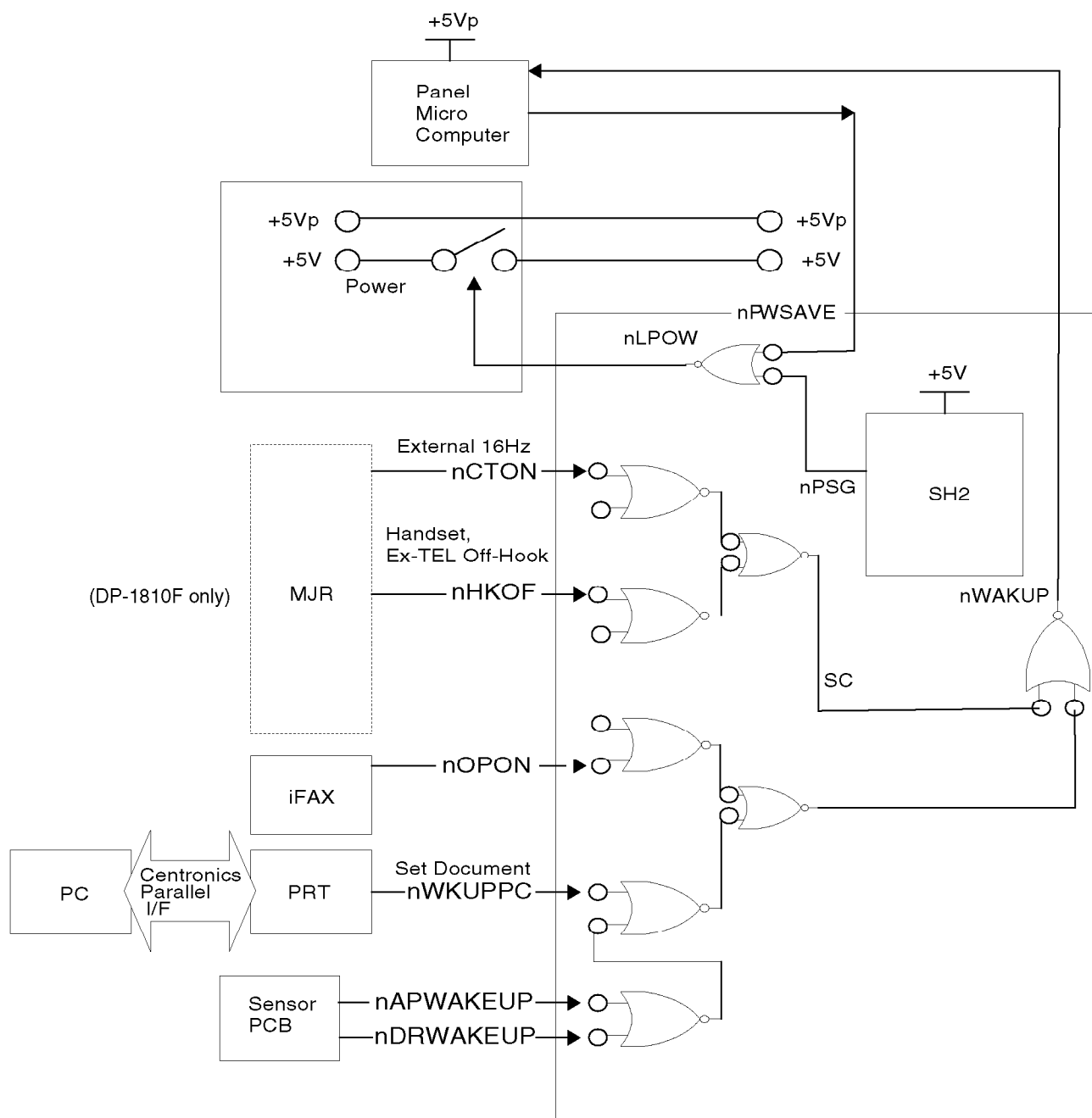
This Panel PC Board consists of Panel Control Sub-CPU, LED, and Key Switch.

The Sub-CPU receives the command of async serial data from SC PCB and executes LCD Display, LED Lamp, Switching Scan, Key Touch Sound, and Alarm Sound. The signal nPSAVE is turned to LOW with the command from SC PCB and shifts to Sleep Mode. When Sleep Mode (Auto Off) is on, only +5VP is reactivated and +5V (for LED Driver) and +24V (for Status LED and Alarm) is cut off. After detecting the signal nWAKUP which is input from SC PCB, the signal nPSAVE is turned to HIGH in order to recover from Sleep Mode and reactivate the main power of the machine.



The machine will emerge from Sleep Mode under the following conditions:

1. Push on Energy Saver Key
2. Original Sensor Actuated (ADF Option)
3. Data Signal from Printer I/F
4. Platen Cover Open
5. Ringing Signal Detected (DP-1810F only).
6. Off-Hook Detected by Option Handset or External Telephone (DP-1810F only).





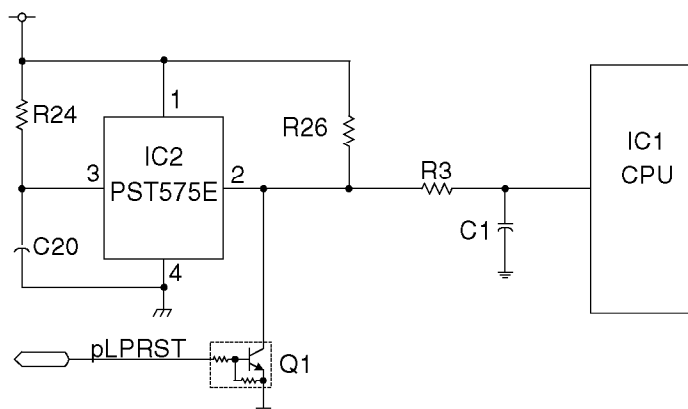
## 6.5.10. Laser Printer Motor Drive Circuit

### 1. System Description

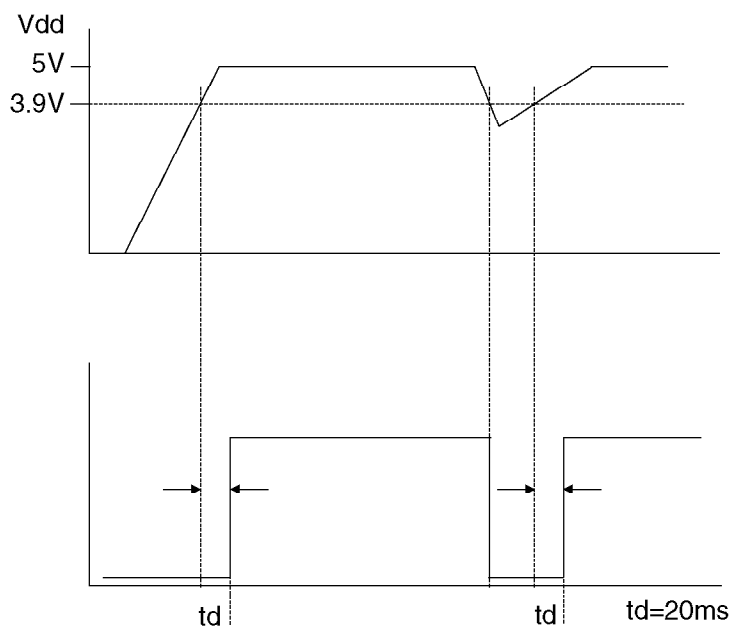
It consists of 16 bit CPU M30802. The CPU controls mechanism of Laser Printer, Fuser Lamp temperature, and Laser Unit.

### 2. Reset Circuit

This circuit consists of IC301 (PST575E) and peripheral circuit. This circuit always watches 5V. Output of this circuit (nRST) is set that if 5V falls below setting level (3.9V). When the 5V rises above voltage, the reset signal is canceled after a delay of approximately 20 ms. After cancelling, software is started by CPU.



Reset Circuit



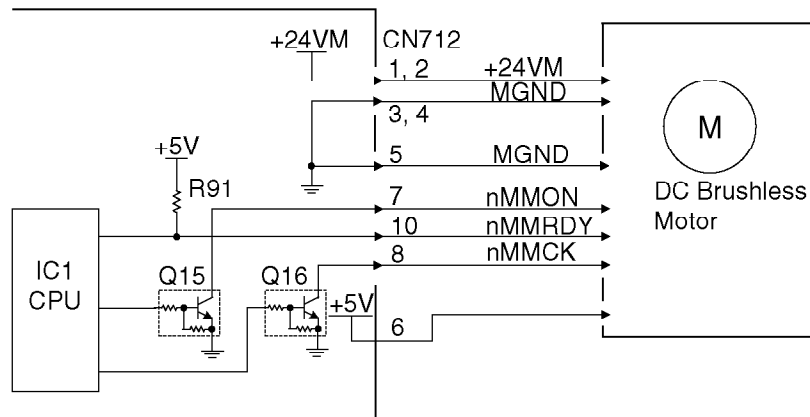
Reset Signal Timing Chart

### 3. Printer Motor Drive Circuit

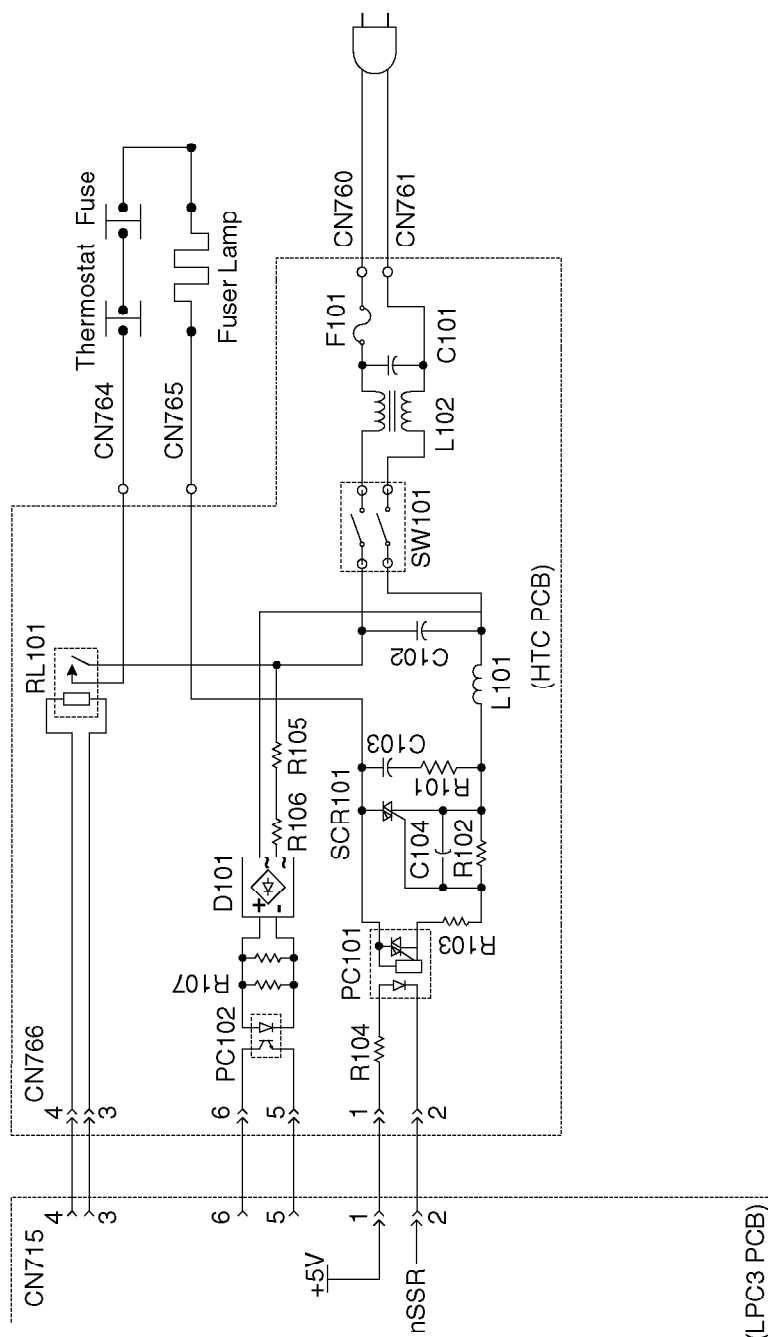
This Printer Motor is a Brushless DC Motor.

- nMMON** : When the signal level goes Low, the Printer Motor starts rotating.  
**nMMRDY** : Rotation status signal for Printer Motor. When the Printer Motor reaches a constant speed, nMMRDY signal level goes Low.  
**nMMCK** : Clock signal for Printer Motor Drive.

The Printer Motor is powered by +24 VDC supply. When the interlocks are open, the +24 VDC supply is cut off and the Printer Motor stops rotating.

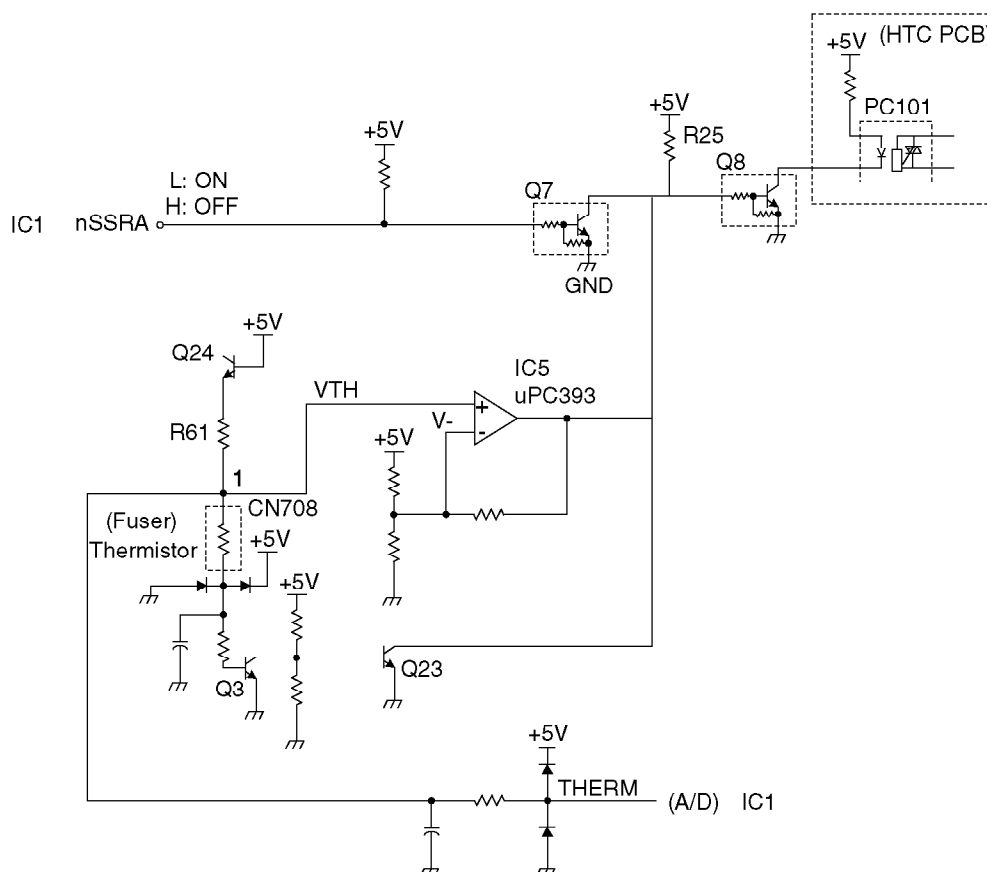


The Fuser Lamp is powered by 100 VAC. When the CN766, Pin 2 (nSSR) on the HTC PCB goes LOW, the Fuser Lamp turns ON. This lights up the PC101 LED and activates the SCR101 photo-triac, and AC is sent to the Fuser Lamp.



## 5. Fuser Temperature Control Circuit

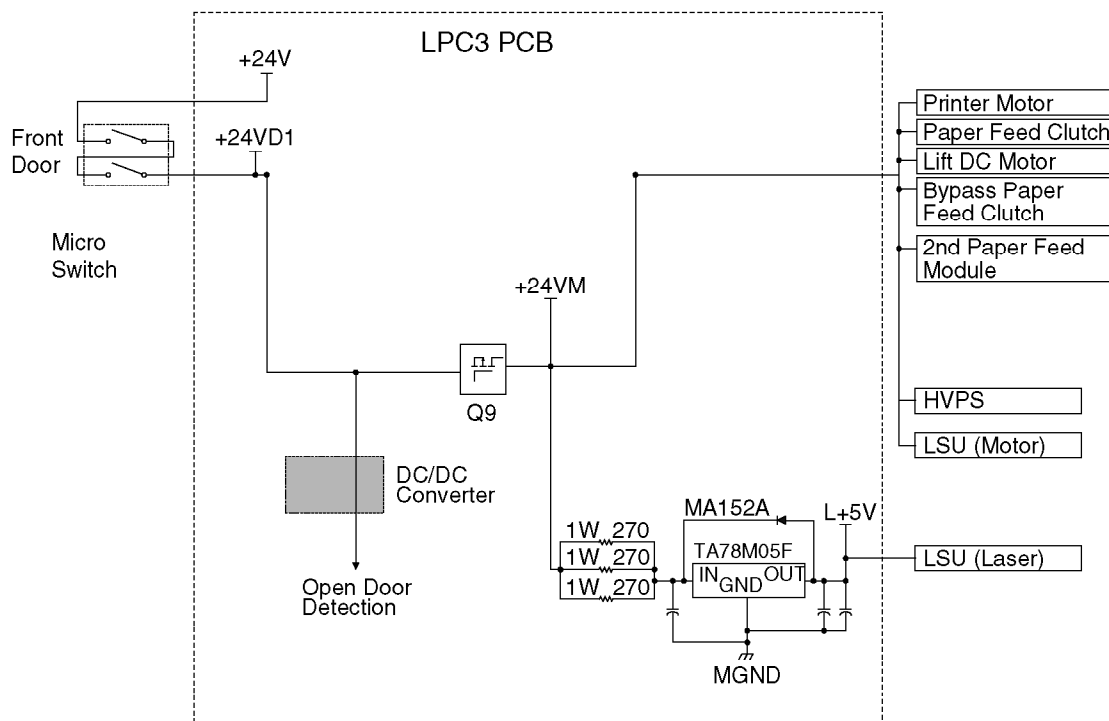
The fuser temperature is controlled by IC1 on the LPC3 PC Board, which contains A/D (Analog/Digital) converters. IC1 adjusts temperature, observing Thermistor and voltages separated by R61 with A/D converters. When the PC101 drive current is transmitted from the LPC3 PC Board to the HTC PCB, the Fuser Lamp turns ON. IC5 is a converter with open output at pins 1 and 7 and is used as an abnormal temperature detection circuit. IC5, pin 1 and 7, has a high impedance when Q7 and Q8 are activated, turning ON the Fuser Lamp. An abnormal temperature is detected when the VTH voltage level becomes lower than V-, forcing IC5, pin 1 and 7 Low and deactivating Q8. Abnormally low and high temperatures, as well as Thermistor release status, are detected by IC1 (CPU) programming.



**Fuser Temperature Control Circuit**

## 6. Interlock Safety Circuit

This safety circuit turns OFF the +24 VDC and +5 VDC supply voltages when the Front Door Cover is opened. When the Front Door Cover is opened, the microswitch(es) on the ILS PC Board are de-actuated, turning OFF +24 VDC to the Printer Motor Drive Circuit, the HVPS, the Paper Feed Solenoid Circuits, the Clutch Drive Circuit, and the Laser Driver Circuit on the Laser Unit.

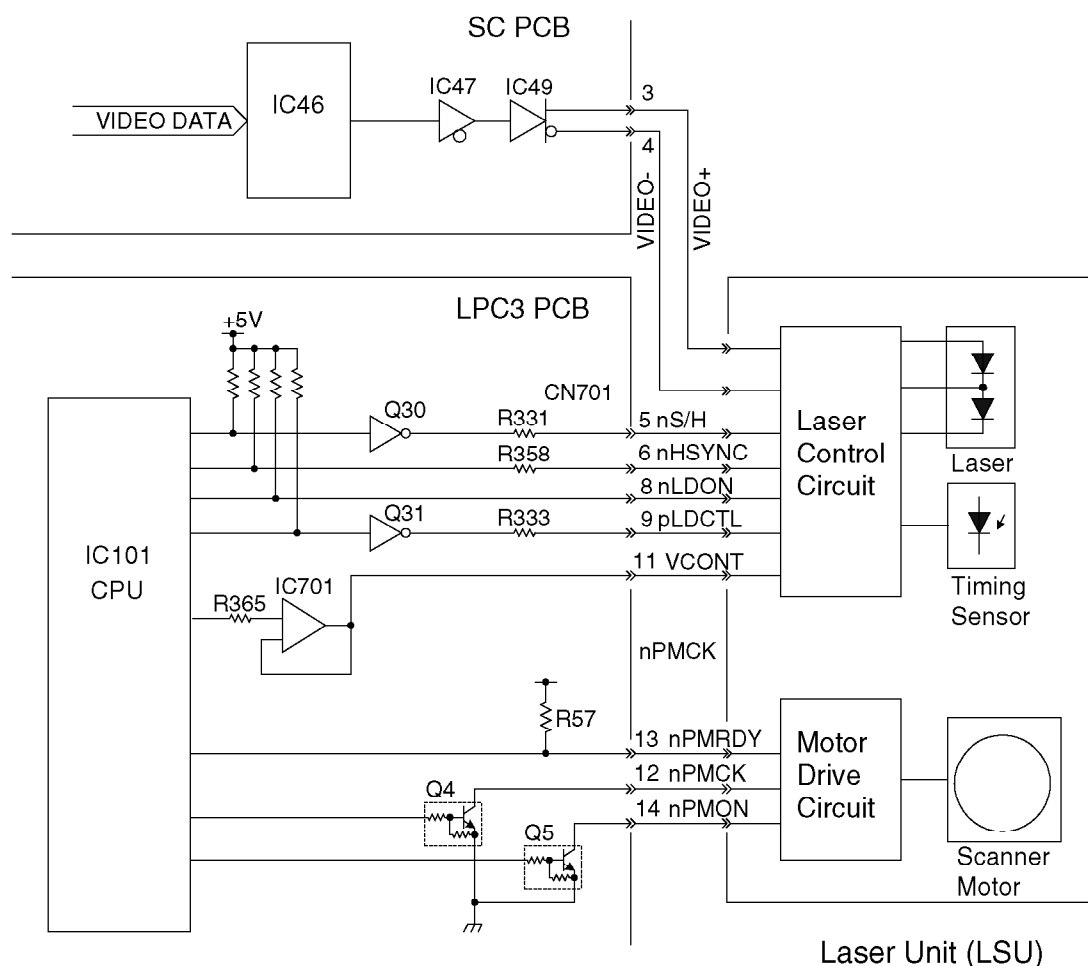


**Interlock Safety Circuit Block Diagram**

## 7. LSU Control Circuit

The laser control signals are described below.  
Actual data is sent from SC PCB to LSU.

- VIDEO+** : Actual data is outputted by these 2 signals.
- VIDEO-**
- nS/H** : Laser Power Sample/Hold Timing Signal.
- nHSYNC** : This horizontal synchronization signal transmitted from the Beam Detection Sensor sets the horizontal position of the laser beam as it crosses the OPC Drum.
- nLDON** : The LSU is activated when this output signal is LOW. If an error occurs, the nLDON output signal level goes High and the LSU is deactivated.
- pLDCTL** : This signal turns ON the laser output to activate nHSYNC signal.
- VCON** : This is the Analog Voltage for adjusting Laser output power.
- nPMCK** : This is the Polygon Motor Drive Clock.
- nPMRDY** : When the Polygon Motor speed is constant, the nPMRDY is at a Low output signal level.
- nPMON** : This is the Polygon Motor Control Signal. The Polygon Motor rotates when the nPMON output signal level is LOW.



## 7 Installation

### 7.1. Precautions During Set Up

Copy machine performance and the copy quality is subject to and dependant on environmental conditions. To maintain good performance, quality, and safe operation, observe the following precautions:

1. For safe operation and to avoid trouble, do not install the system under the following conditions:
  - High temperature, high humidity, low temperature or low humidity
  - Sudden changes in temperature or humidity
  - Exposed to direct sunlight
  - Dusty environment
  - Poorly ventilated location
  - Exposed to chemical gases (such as ammonia gas)
  - Exposed to strong vibration
  - Exposed to direct air current (ex. Air conditioner vent)
2. The weight of machine is 91 lb (41 kg) or more with options. It must be installed on a firm and leveled surface.
3. The maximum power consumption is 1.5 kW. Depending on the product destination, the wall outlet must be rated for 120 VAC or 220-240 VAC accordingly. It must also be protected for at least 15 amps for 120 VAC, or 10 amps for 220-240 VAC. If you are in doubt about a power source, ensure that a qualified electrician checks the outlet. Do not connect any other devices to the wall outlet designated for this machine. (Do not use an extension cord)
4. Make sure the outlet is properly grounded. (Do not ground to gas or water pipe)
5. Install in an area that meets or exceeds the minimum space requirement.

### 7.2. Unpacking

Visually check the condition and contents of the box for completeness or any shipping damage before installation.

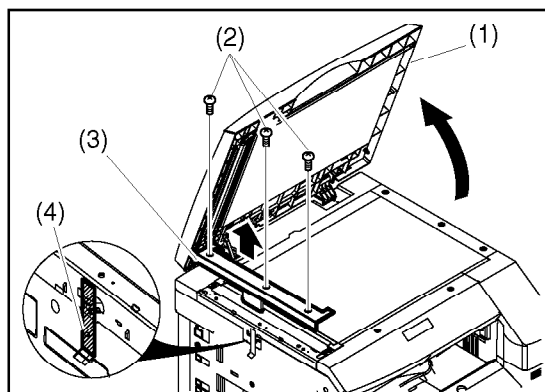
Remove all filament tapes used to secure the Fuser and Process Units during shipment.

### 7.3. Installation Procedure

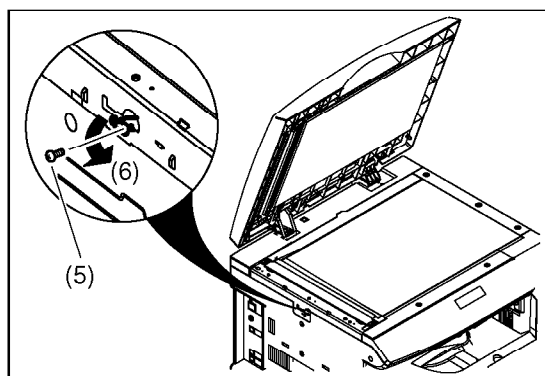
**Note:**

1. Refer to each individual Installation Instructions when installing Stands or other Optional Kits.
2. The following machine illustrations, depicts a DP-1810P with a standard configuration of 1 Paper Tray.
3. The scanner is held in place by a Metal Shipping Bracket to prevent damage during transit.  
Do not turn the Power Switch ON before unlocking the scanner.
4. The machine is shipped from the factory with the Pressure Roller locked in the opened position to avoid the possibility of damaging the Pressure Rollers.  
Do not turn the Power Switch ON before unlocking the Pressure Roller.

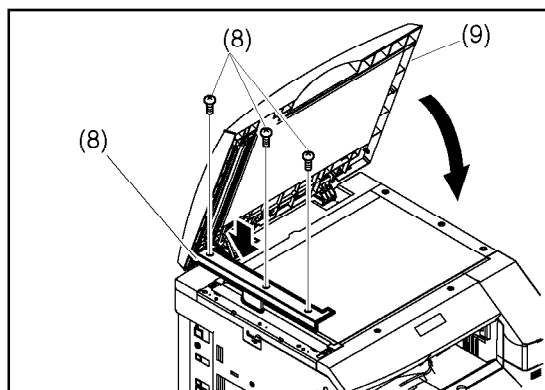
### 7.3.1. Installation Procedure



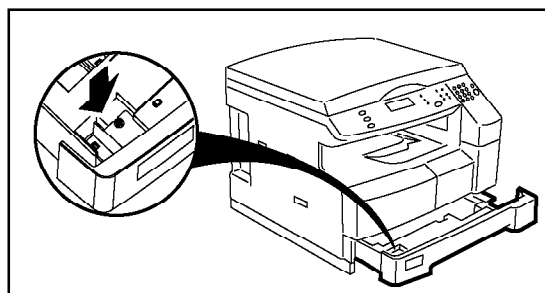
- (1) Open the **Platen Cover** or the **ADF**.
- (2) Remove 3 **Silver Screws**.
- (3) Remove the **Left Platen Cover**.
- (4) Remove the **Orange Tape**.



- (5) Remove 1 **Blue Screw**.
- (6) Remove the **Metal Shipping Bracket** by rotating counter-clockwise.
- (7) Re-install the **Blue Screw** removed in step (5).

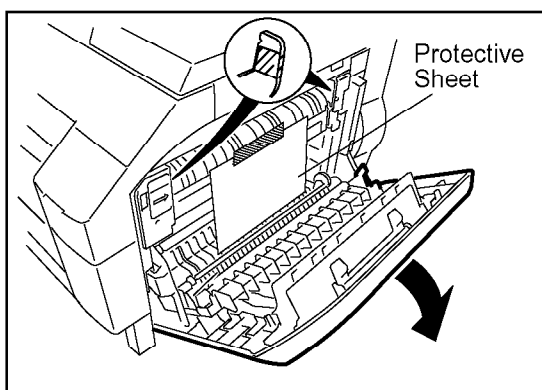


- (8) Re-install the **Left Platen Cover** and fasten with 3 Silver Screws removed in step 2.
- (9) Close the **Platen Cover** or the **ADF**.

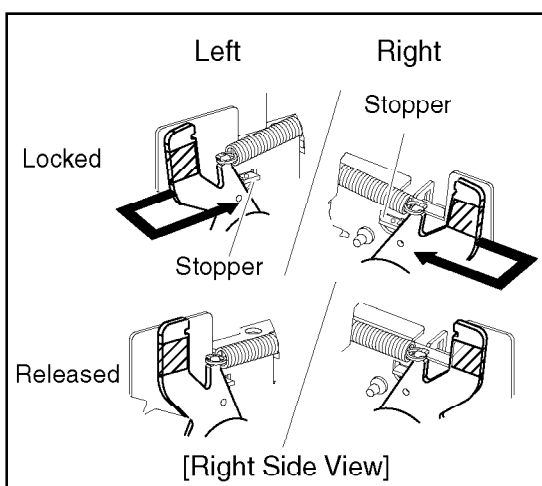


- (10) Store the **Metal Shipping Bracket** removed in step (6) in the space provided in the Paper Tray.

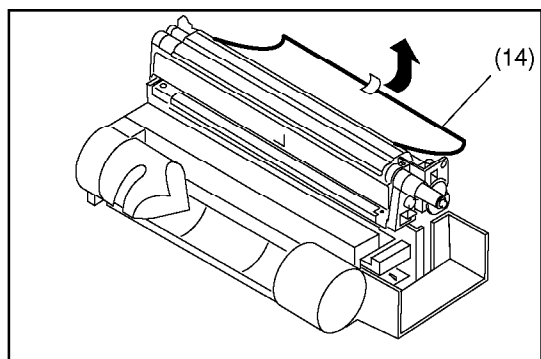




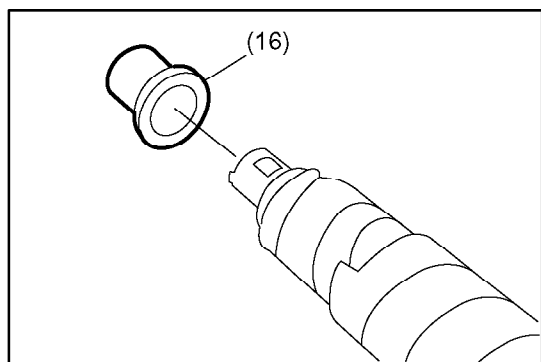
- (11) Open the **Right Cover**.  
(12) Remove the **Protective Sheet**.



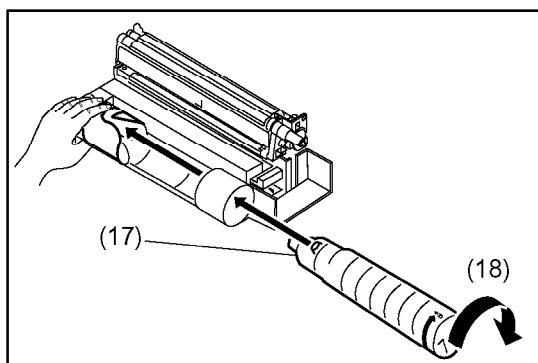
- (13) Release 2 **Pressure Levers** as illustrated.



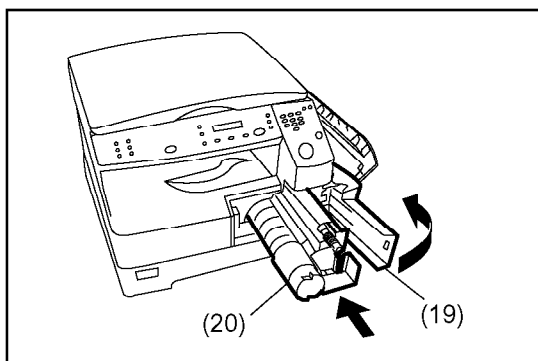
- (14) Remove the **Protection Paper** from the Process Unit.



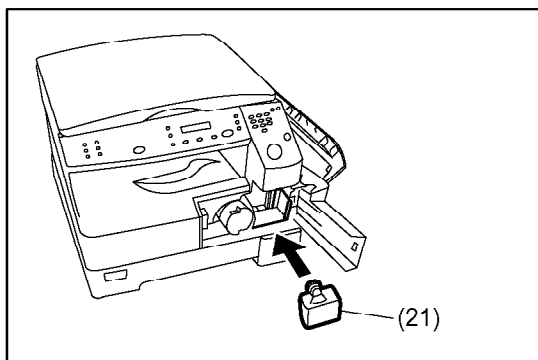
- (15) Shake the new **Toner Bottle** four or five times to loosen the contents.  
(16) Remove the **Toner Bottle Cap**.



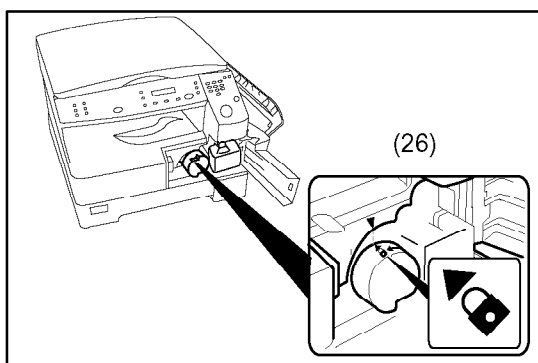
- (17) Align the Key of the **Toner Bottle** with the Key Alignment Channel of the **Bottle Holder**.
- (18) Insert the Bottle as far as it will go, then while holding the Bottle Holder in place, turn the Toner Bottle clockwise (160°, approx. 1/2 turn) until it locks.




- (19) Open the **Front Cover**.
- (20) Install the **Process Unit**, making sure it is locked in place by the **White Latch Hook**.



- (21) Install the **Toner Waste Container**, making sure it is secured by the **Black Bracket**.
- (22) Close the **Front Cover** and **Right Cover**.
- (23) Connect the **Power Cord** and turn the **Power Switch ON**.



- (24) Wait for the toner to charge and fill the process unit.
- (25) Open the **Front Cover**.
- (26) Make sure that the Arrow (**Locked** symbol ) visible on the end of the Toner Bottle is aligned with the Arrow mark on the machine.

**Note:**  
If not aligned, remove the **Toner Bottle** again. Turn it 180° (1/2 turn) and re-install it. The Arrow marks should be aligned as described in step (26) above. Then close the **Front Cover**.

**Note:**  
Set the parameter for **F5-73 [PM (OPC DRUM)]** and/or **F5-74 [PM (PROCESS UNIT)]** to "User" if the replacement will be done by the user.

## 7.4. Adjustment

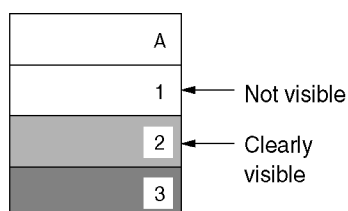
### 7.4.1. Exposure (Standard Adjustment)

The following values will be added to the reference value. DO NOT adjust these codes in the field.

F6-18 : Laser power compensation

F6-19 : Developer bias standard voltage compensation

1. Press "FUNCTION", "ORIGINAL SIZE", and "3" keys sequentially to enter the Service Mode.
2. Press "6" and "START" keys to enter the F6 Mode.
3. Ensure that F6-18 and 19 are set to "0".
4. Enter F2 Mode and set the exposure to the center position.  
Set the machine to TEXT / PHOTO Mode.
5. Make a copy of Test Chart 53/54 with gray scale (P/N FQ-SJ1011) and verify the density as shown below. If it is within specification, skip to step (10).
  - a. Gray scale "1" should not be visible.
  - b. Gray scale "2" should be clearly visible.



6. Enter F6-50 Mode.
7. Enter the new content.

**Note:**

The "RESET" key is used to enter the "-" content.

(+) : Lighter side

(-) : Darker side

8. Press the "OK" key, then press "CLEAR" key.
9. Enter F2 Mode.
10. Make a copy to confirm the adjustment.

**Note:**

Repeat Step (3) to (9) until proper density is attained.

F6-49 : Text Mode

F6-51 : Photo Mode

11. Press "FUNCTION" and "CLEAR" keys simultaneously to exit the Service Mode.

### 7.4.2. Lead Edge Registration Adjustment (2nd Tray)

1. Press "FUNCTION", "ORIGINAL SIZE", and "3" keys sequentially to enter the Service Mode.
2. Press "6" and "START" keys to enter the F6 Mode.
3. Enter F6-05 Mode.
4. Enter the new content.

**Note:**

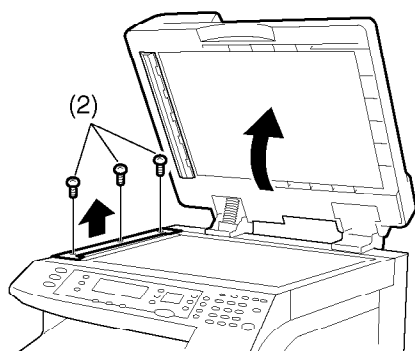
The "RESET" key is used to enter the "-" content.

(+) : Paper feed timing is delayed.

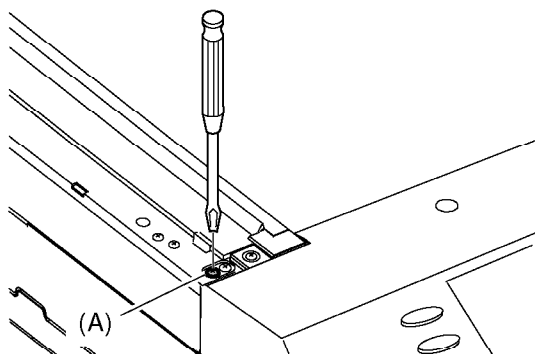
(-) : Paper feed timing is advanced.

5. Press the "OK" key, then press "CLEAR" key.
6. Enter F2 Mode.
7. Make a copy to confirm the adjustment. Perform Step (3) again, if necessary.
8. Press "FUNCTION" and "CLEAR" keys simultaneously to exit the Service Mode.

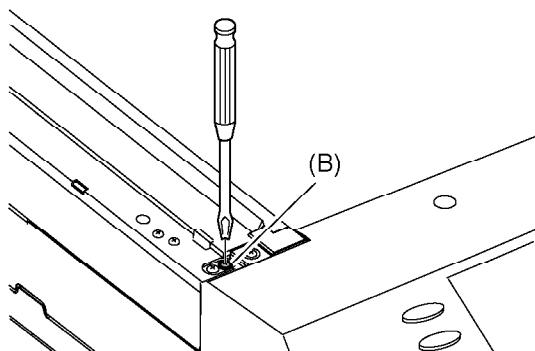
### 7.4.3. Leading Edge Adjustment (Scanner)



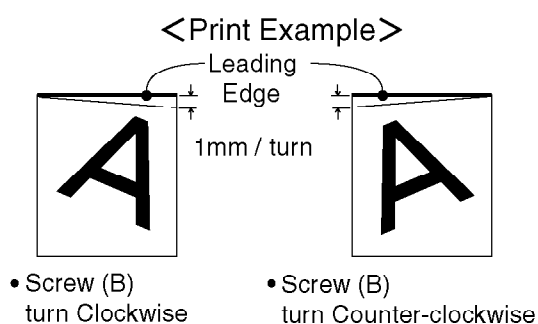
- (1) Make sure that the Scanner Unit is at initial position.
- (2) Remove 3 **Silver Screws** and remove **Left Platen Cover**.



- (3) Loosen the Left edge **Screw (A)** turning counter-clockwise 1 or 2 rounds.



- (4) Adjust the Leading Edge by turning the **Adjustment Screw (B)**.



- (5) If the Leading Edge is skewed to the right, turn the **Adjustment Screw (B)** clockwise.
- (6) If the Leading Edge is skewed to the left, turn the **Adjustment Screw (B)** counter-clockwise.
- (7) Secure the **Screw (A)** and re-install **Left Platen Cover**.





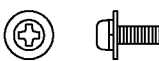
**Note:**

1 turn adjusts the edge skew by approximately 1mm on Ledger or A3 document size.

## 8 Options and Supplies

### 8.1. Installing the 10/100 Ethernet Interface / Internet Fax Kit (DA-NE200)

#### 8.1.1. Contents Required for DP-1510P/1810P/1810F/2010E

Qty.	Description	Part No.	Remarks
1	LANB PC Board	See Note 2	
1	LANB-LANC Harness	DZFP000898	
1	LANC-BK Assembly	DZHP004034	
1	LAN Port Label	DZNK004121	
3	Screw	XTB3+8J	
1	Bracket, LANC A	DZJB000340	
1	Bracket, LANB	DZJB000308	
5	Screw	XYN3+F8	
1	Core, Ferrite	DZDN000232	For 200VDC Destinations Only
1	DP-1810/2010 Operating Instructions	See Note	
1	Installation Instructions	DZSM000512	

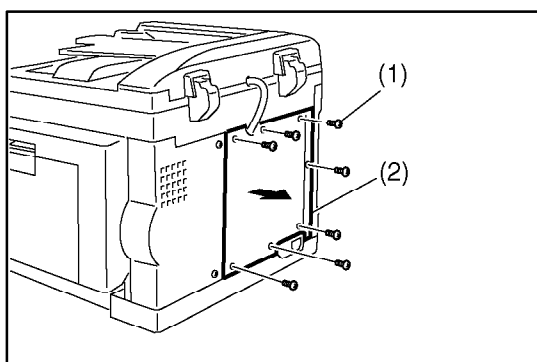
**Note:**

The part number differs depending on the Destination. Refer to the Parts Manual.  
This kit contains additional parts to install this Option on several machine models,  
use only the required parts for the model you are installing.

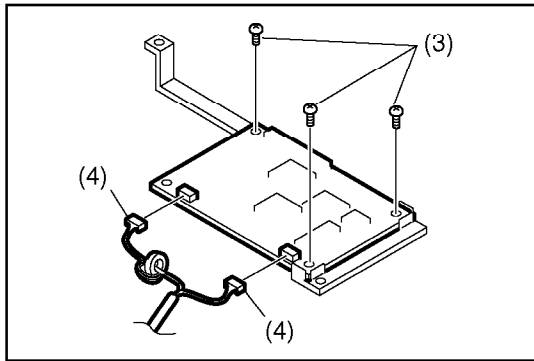
#### 8.1.2. Installation

**Note:**

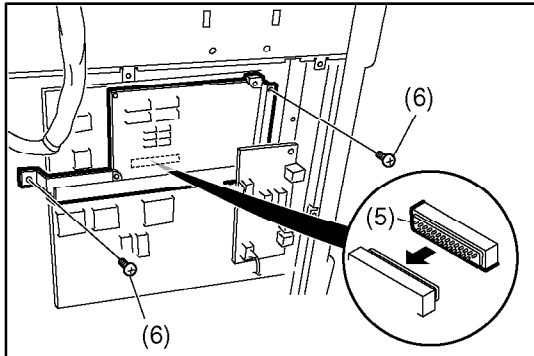
1. With this Option, the DP-1510P/1810P/2010E can be used as a Network Printer and the DP-1810F as an Internet-Fax & Network Printer.
2. Turn the Power Switch to the OFF (O) position and unplug the AC Power Cord before beginning installation.



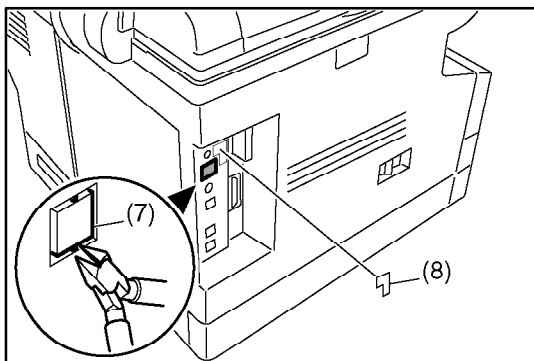
- (1) Remove 7 Screws.
- (2) Remove the Rear Plate.



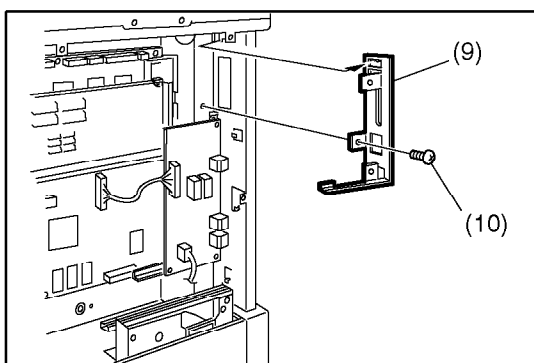
- (3) Secure the LANB PC Board onto the Bracket with 3 Screws (XYN3+F8).
- (4) Connect the LANB-LANC Harness to CN5 and CN6 on the LANB PC Board.



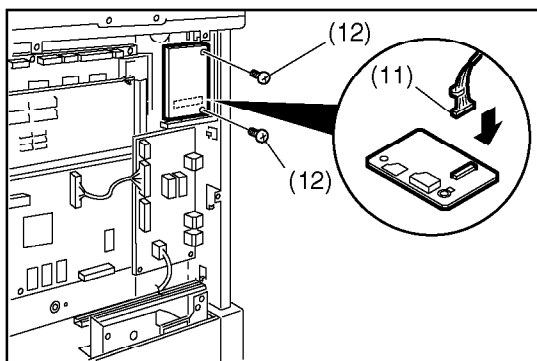
- (5) Install the LANB PC Board Assembly.
- (6) Secure the LANB PC Board Assembly with 2 Screws (XTB3+8J).



- (7) Break off the protective tab on the Left Side Cover.
- (8) Attach the Label.



- (9) Install the LANC A Bracket.
- (10) Secure the LANC Bracket with 1 Screw (XTB3+8J).



**Note:**

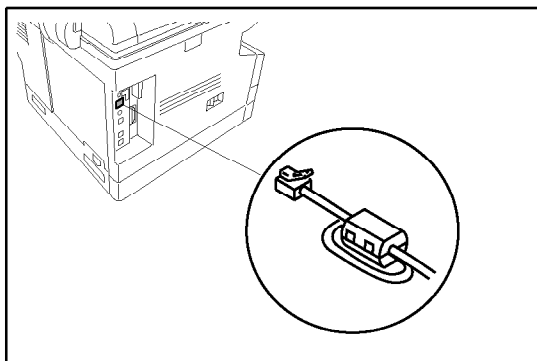
Remove the **LANC PC Board** from **LANC BK Assembly** (DZHP004034).

(LANC Bracket : DZJB000166 : Not used)

(11) Connect the LANB-LANC Harness to CN200 on the LANC PC Board.

(12) Install the LANC PC Board and secure with 2 Screws (XYN3+F8).

(13) Proceed with the installation of other options.  
If finished, re-install the Rear Plate.



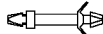
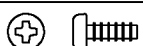
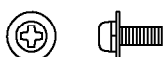
**Note:**

For 200 VDC Destinations Only.

Install the **Ferrite Core** to the **Ethernet LAN Cable** with one loop as shown.

## 8.2. Installing the PCL6 Emulation Kit (DA-PC210)

### 8.2.1. Contents Required for DP-1510P/1810P/1810F/2010E

Qty.	Description	Part No.	Remarks
1	EP PC Board w/FRM PCB	DZEC101289	
1	Locking Spacer	DZJH000063	
1	Bracket, PDL	DZJB000339	
1	Screw	XTB3+8J	
2	Screw	XYN3+F8	
1	Software CD	See Note 2	Includes Operating Instructions
1	Licence Agreement	See Note 2	
1	Installation Instructions	DZSM000511	

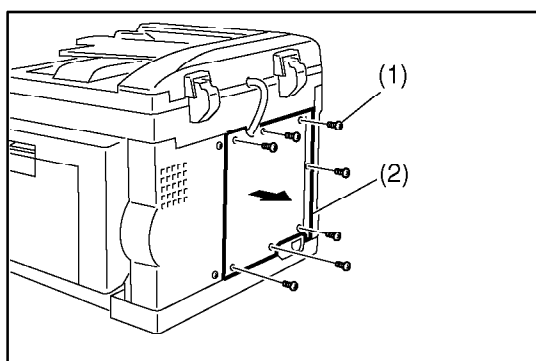
**Note:**

The part number differs depending on the Destination. Refer to the Parts Manual.  
This kit contains additional parts to install this Option on several machine models,  
use only the required parts for the model you are installing.

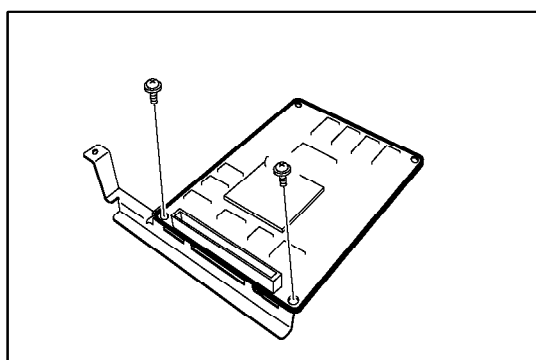
### 8.2.2. Installation

**Note:**

1. Turn the Power Switch to the OFF (O) position and unplug the AC Power Cord before beginning installation.
2. If you are also installing the Sorting Memory Option, install the memory option first.

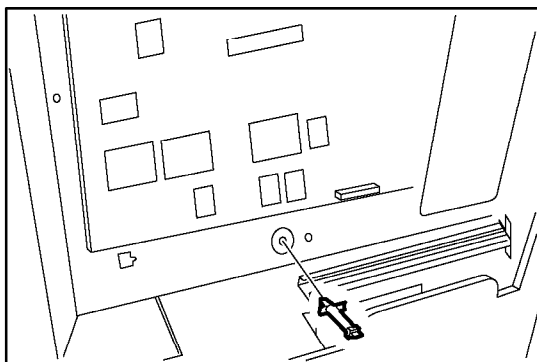


- (1) Remove 7 Screws.
- (2) Remove the Rear Plate.

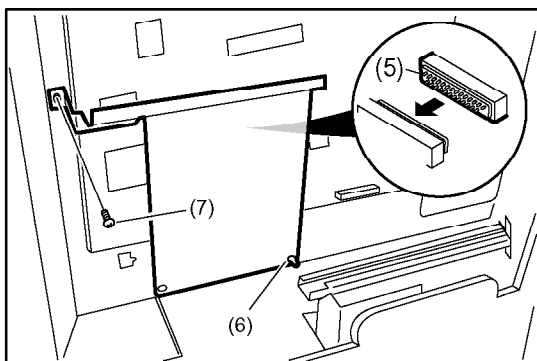


- (3) Secure the EP PC Board onto the Bracket with 2 Screws (XYN3+F8).





- (4) Insert the Locking Spacer (DZJH000063) into the mounting hole on the machine chassis.



- (5) Install the EP PC Board Assembly.  
(6) Insert the Locking Spacer into the EP PC Board Assembly.  
(7) 1 Screw (XTB3+8J).  
(8) Proceed with the installation of other options.  
If finished, re-install the Rear Plate.

## 8.3. Installing the Sorting Image Memory 8/16/64/128 MB (DA-SM08B/16B/64B/28B)

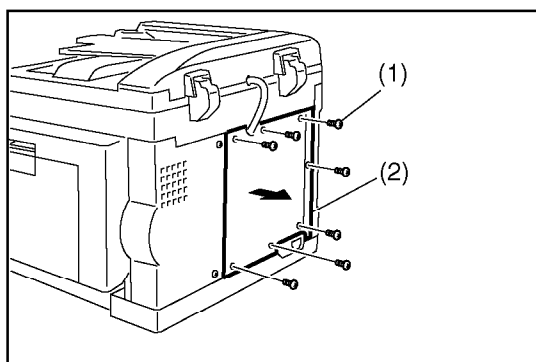
### 8.3.1. Contents

Qty.	Description	Part No.	Remarks
1	SDRM PC Board	DZEC101554	8 MB
		DZEC101666	16 MB
		DZEC101919	64 MB (For EU Only)
		DZEC101667	128 MB
1	Installation Instructions	DZSM000262	For U.S.A. and Canada
		DZSM000402	For Other Destinations

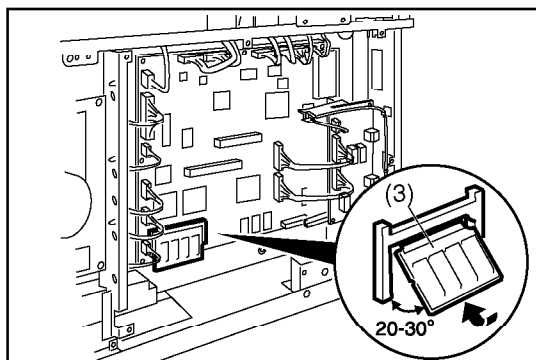
### 8.3.2. Installation

**Note:**

Turn the Power Switch to the OFF (O) position and unplug the AC Power Cord before beginning installation.



- (1) Remove 7 Screws.
- (2) Remove the Rear Plate.



- (3) Insert the SDRM PC Board into the SC PC Board as illustrated on the left.





**Note:**

Make sure to insert the SDRM PC Board at a 20 - 30° angle into the memory socket, and then lock it down.

- (4) Proceed with the installation of other options.  
If finished, re-install the Rear Plate and remaining Covers.

## 8.4. Installing the Automatic Document Feeder (DA-AS180) for DP-1510P/1810P/2010E

### 8.4.1. Contents

Qty.	Description	Part No.	Remarks
1	Automatic Document Feeder (ADF)	See Note	Standard on DP-1810F
2	Angle Plate	DZJA000858	
1	Scanning Pad	DZHP006374	
2	Screw	DZPB000007	 
4	Screw	XTB3+12J	 
1	Installation Instructions	DZSM000523	

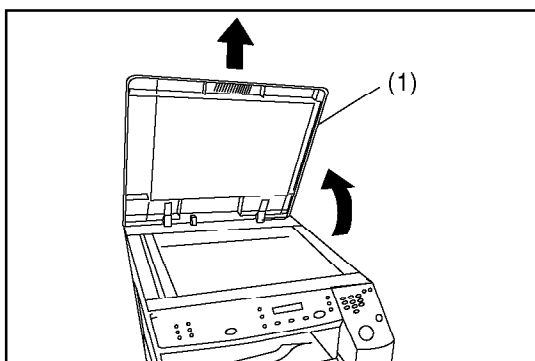
**Note:**

The part number differs depending on the Destination. Refer to the Parts Manual.

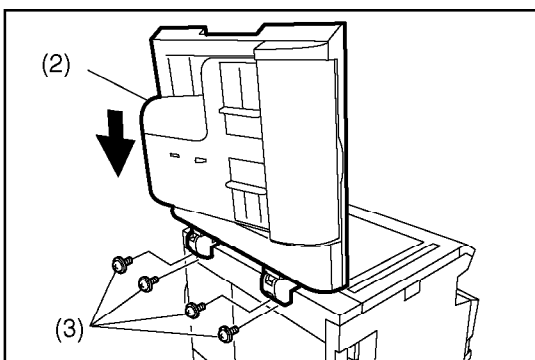
### 8.4.2. Installation

**Note:**

Turn the Power Switch to the OFF (O) position and unplug the AC Power Cord before beginning installation.

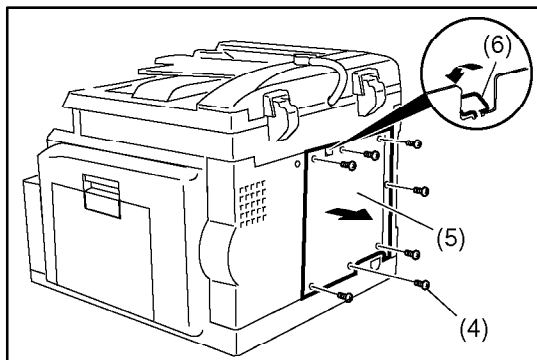


(1) Open and remove the Platen Cover.

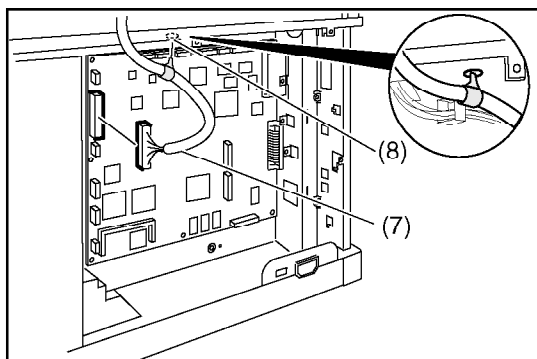


(2) Install the Automatic Document Feeder into the 2 Mounting Holes.

(3) Secure the ADF with 4 Screws (XTB3+12J).



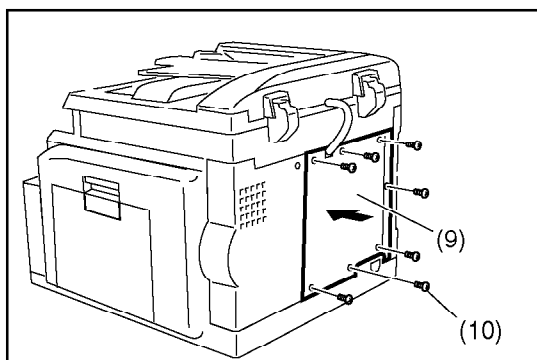
- (4) Remove 7 Screws.
- (5) Remove the Rear Plate.
- (6) Bend the protective Tab on the Rear Plate further than 90° as illustrated on the left.



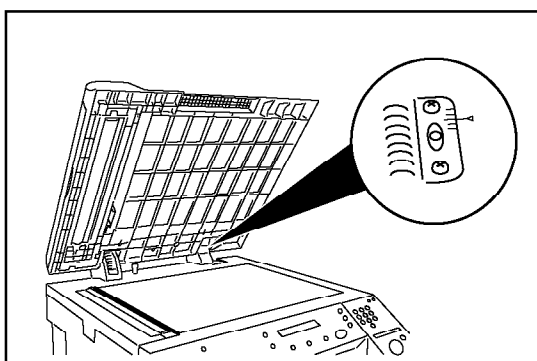
- (7) Connect the Harness to CN3 on the SC PC Board.
- (8) Insert the Harness Clamp into a pre-drilled hole in the frame (from underside).

**Note:**

Do not cut the Harness Clamp (Tie-Wrap) when servicing. Push the release clip on the side to remove it.



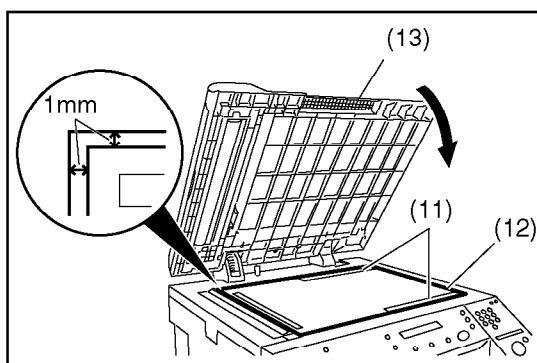
- (9) Re-install the Rear Plate.
- (10) Secure the Rear Plate with 7 Screws removed in step (4).



**Note:**

Align the ADF if required by following the steps below.

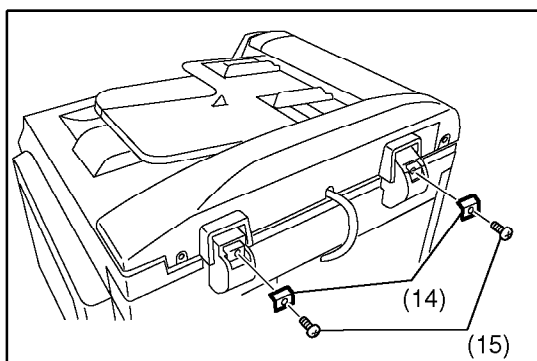
- (A) Release the 4 Screws.
- (B) Adjust the right side of the ADF and the ADF Mounting Bracket as illustrated on the left.
- (C) Secure the 4 Screws.



- (11) Peel off the 2 adhesive protectors from the Scanning Pad.
- (12) Place the Scanning Pad on the glass, aligning with the upper left corner, keeping 1mm space as shown on the left.
- (13) Close the ADF.

**Note:**

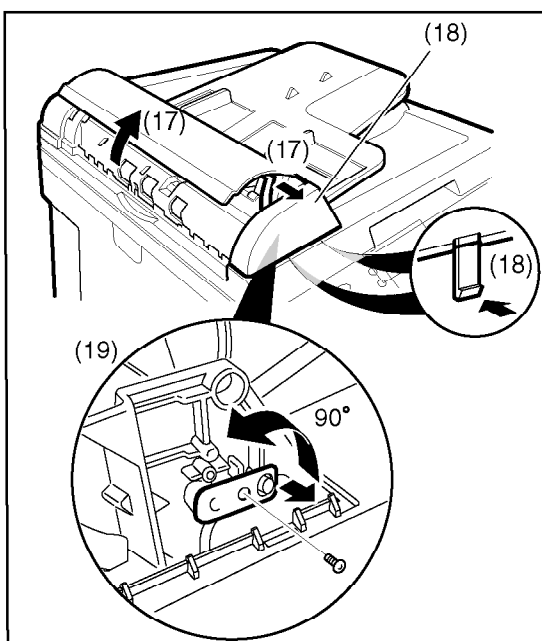
Re-open the ADF Unit and push the Scanning Pad gently to paste it properly.



- (14) Install 2 Angle Plates.
- (15) Secure 2 Angle Plates with 2 Screws (DZPB000007).

**Note:**

When installing the ADF Unit, set the **Default Value of Sort Copy Mode** to "ON".



- (16) Copy the Original using ADF.

**<Check the Original alignment.**

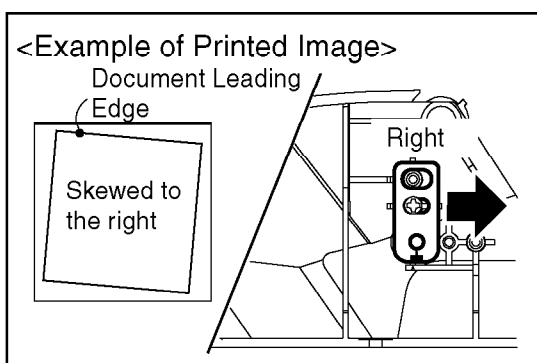
**If necessary, adjust by following steps below>**

- (17) Open the ADF Cover and release the Stopper.
- (18) Remove the ADF Front Cover.

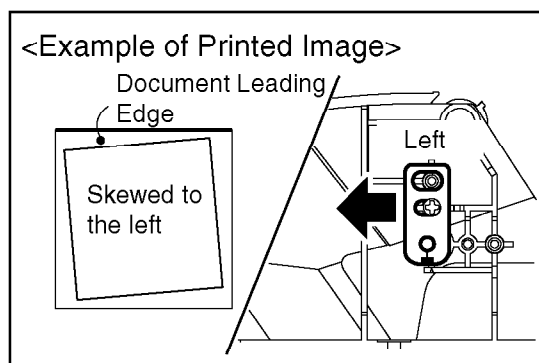
**Note:**

Release the 2 Latch Hooks from back by opening the ADF.

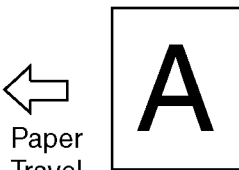
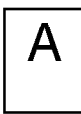

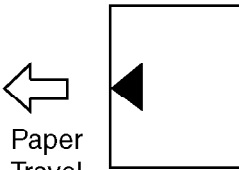

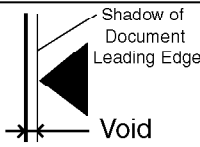
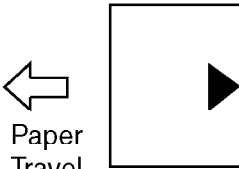

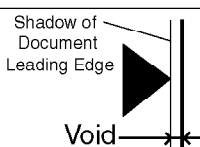
- (19) Remove 1 Screw and turn the Adjust Bracket counter-clockwise.



- (20) If the Document is Skewed to the right, set the Adjusting Bracket to the right and secure with 1 Screw.

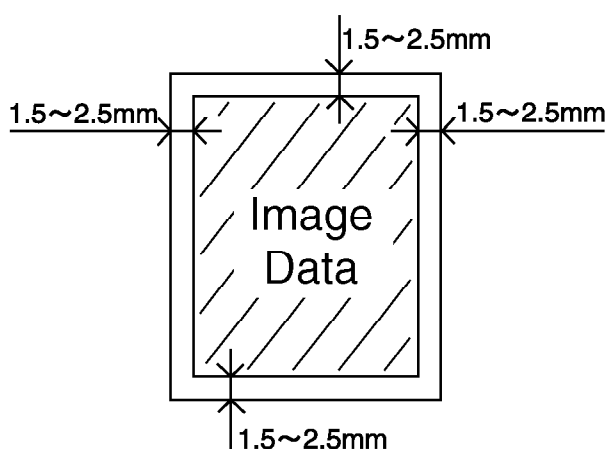


- (21) If the Document is Skewed to the left, set the Adjusting Bracket to the left and secure with 1 Screw.

	Document	Printed Image	Adjustment	Adjustment Amount	Remarks	
No. 90 ADF Detection Timing (ADF Image Read Start Position Adjustment)			+	0.2mm / 1 Point	After setting the Parameter, reboot the machine to enable the Parameter Setting.	
			-	0.2mm / 1 Point		
No. 91 ADF Original Leading Edge Registration (Original Lead Edge Detection Timing Adjustment)			-	0.2mm / 1 Point	Rebooting is not necessary to enable the Parameter Setting.	
			+	0.2mm / 1 Point		
No. 93 ADF Original Trailing Edge Registration (Original Trail Edge Detection Timing Adjustment)			+	0.2mm / 1 Point		
			-	0.2mm / 1 Point		
No. 94 ADF Magnification Ratio (Top Feed) (Ratio Adjustment when the scan is made)	Reduced	+		0.1% / 1 Point		
	Enlarged	-		0.1% / 1 Point		





### < When Adjusting the ADF Unit >

Adjust the ADF Unit to scan the lined part (inside of the margin 1.5 - 2.5mm) on the document as shown on the right.



## 8.5. Installing the Inverting Automatic Document Feeder (DA-AR201) for DP-2010E

### 8.5.1. Contents

Qty.	Description	Part No.	Remarks
1	Inverting Automatic Document Feeder (i-ADF)	See Note	For DP-2010E
1	Scanning Pad	DZJM000428	
2	Hinge Stopper	DZJA000726	
2	Hinge Cover	DZMC000713	
2	ADF Mounting Bracket	DZJA000730	
1	i-ADF OPS Actuator	DZJM001007	For DA-AR201 Only
1	i-ADF Rear Support Bracket	DZJD000035	
9	Screw	XTB8+8J	
8	Screw	XTB3+12J	
2	Silver Screw	XSN4+W10FN	
2	Thumb Screw	DZPA000064	
1	Installation Instructions	DZSM000551	This Document

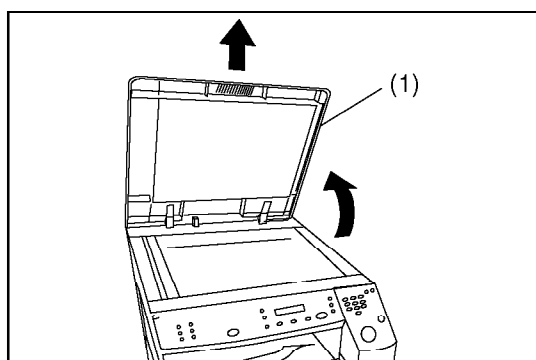
**Note:**

The part number differs depending on the Destination. Refer to the Parts Manual.

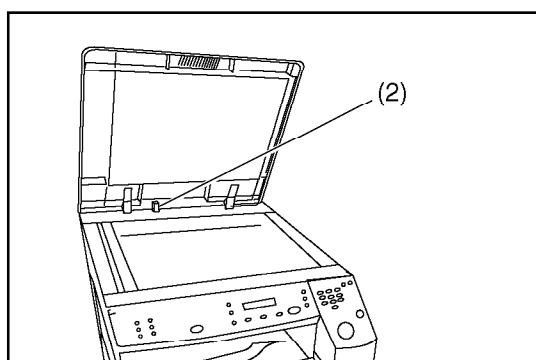
### 8.5.2. Installation

**Note:**

Turn the Power Switch to the OFF (O) position and unplug the AC Power Cord before beginning installation.

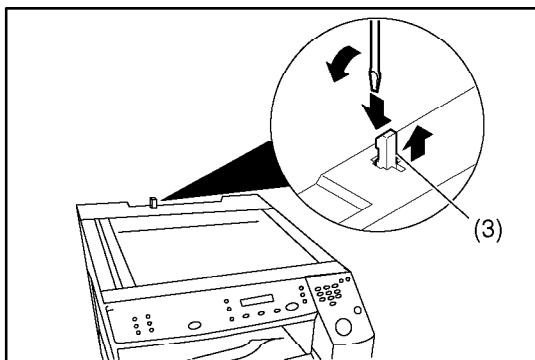


(1) Open and remove the Platen Cover.

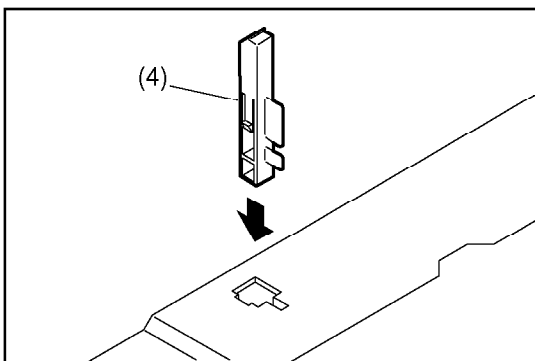


(2) Replace the OPS Actuator with the i-ADF OPS Actuator by following the steps below.

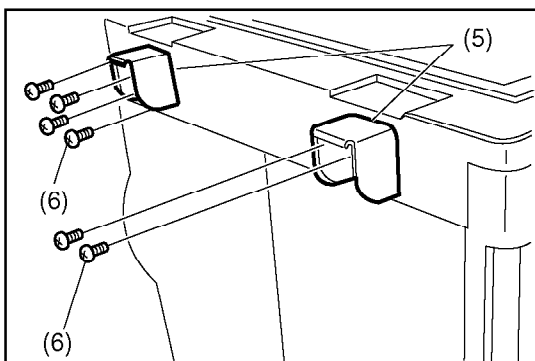




(3) Using a Slotted Blade Screwdriver, remove the OPS Actuator as illustrated.

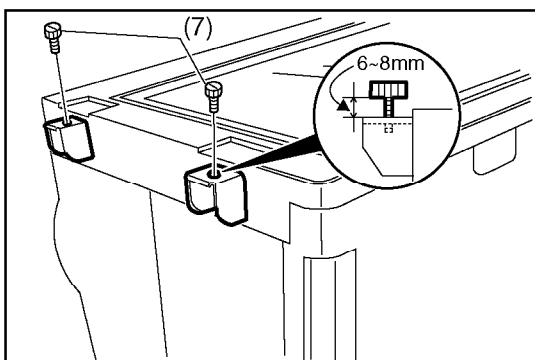


(4) Install the i-ADF OPS Actuator.



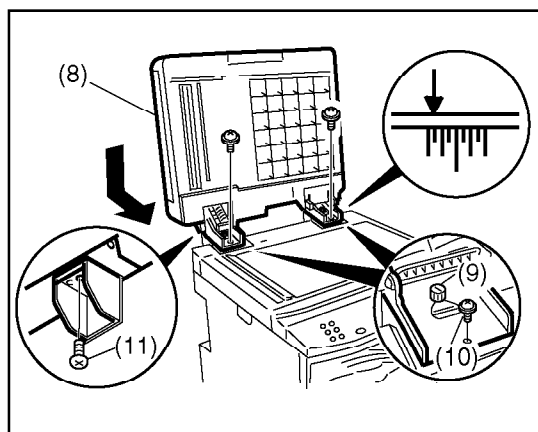
(5) Install the 2 ADF Mounting Brackets.  
(6) Secure the 2 brackets with 6 Screws (XTB3+12J) as illustrated.

**Note:**  
The remaining 2 Screws (XTB3+12J) will be installed in step (20).



(7) Install 2 Thumb Screws (DZPA000064).  
(One for each ADF Mounting Bracket)

**Note:**  
When installing the Thumb Screws, do NOT tighten them. Leave a clearance of approx. 6-8 mm, as illustrated.



(8) Install the i-ADF on top of the ADF Mounting Brackets.

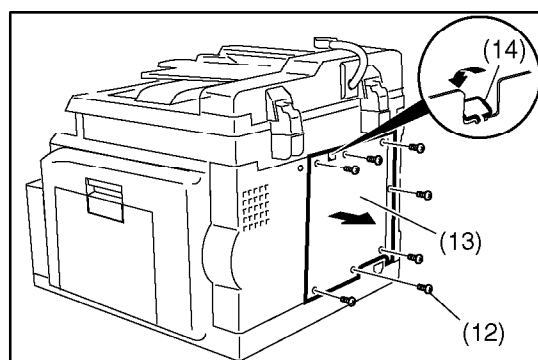
**Note:**

- a. Set the i-ADF in the direction of the arrow.
- b. Align the hallmark on the right side of the Hinge Base and the ADF Mounting Bracket as illustrated.

(9) Tighten the 2 Thumb Screws (DZPA000064).

(10) Secure the Automatic Document Feeder with 2 Silver Screws (XSN4+W10FN).

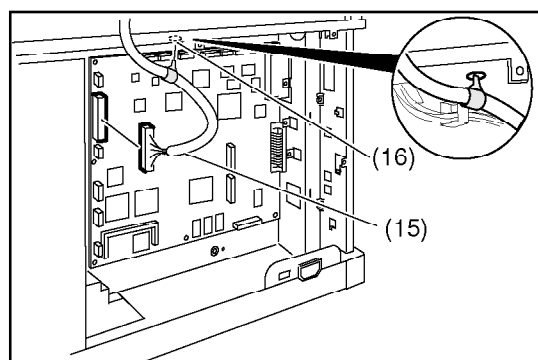
(11) Install 1 Screw (XTB3+8J) on the back of the left ADF Mounting Bracket from the bottom as illustrated.



(12) Remove 7 Screws.

(13) Remove the Rear Plate.

(14) Bend the protective Tab on the Rear Plate further than 90° as illustrated.

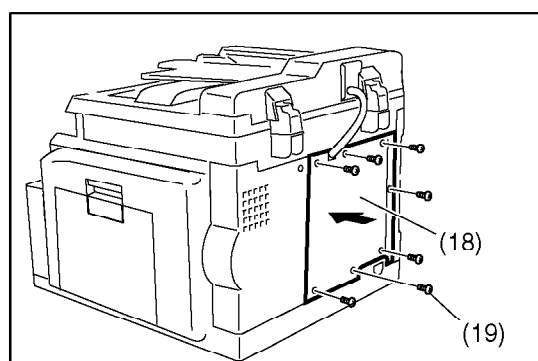


(15) Connect the i-ADF Harness to CN3 on the SC PC Board.

(16) Insert the Harness Clamp into the pre-drilled hole in the frame (from underneath).

**Note:**

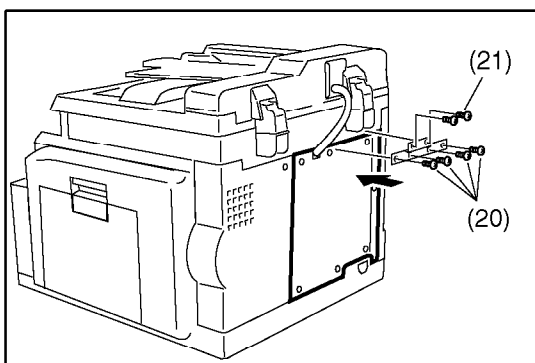
Do not cut the Harness Clamp (Tie-Wrap) when servicing. Push the release clip on the side of the clamp to remove it.



(17) Before proceeding, install the other options first.  
If finished, close the i-ADF.

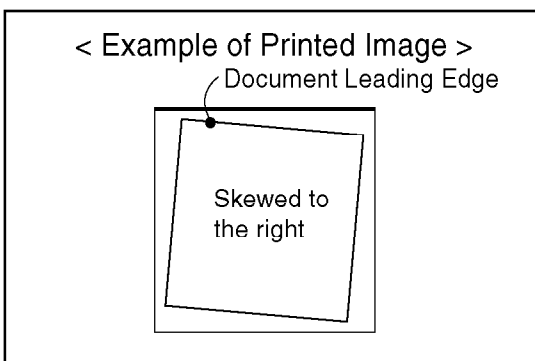
(18) Re-install the Rear Plate.

(19) Secure the Rear Plate with 7 Screws removed in step (12).

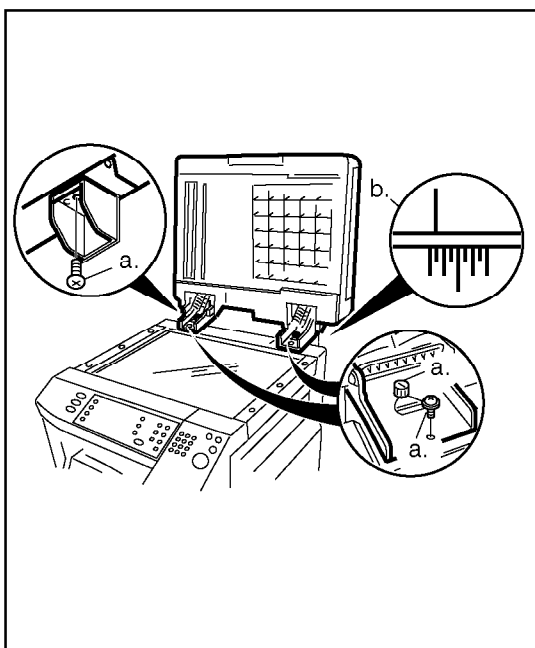


(20) Secure the i-ADF Rear Support Bracket with 4 Screws (XTB3+8J).

(21) Secure the i-ADF Rear Support Bracket with 2 Screws (XTB3+12J).

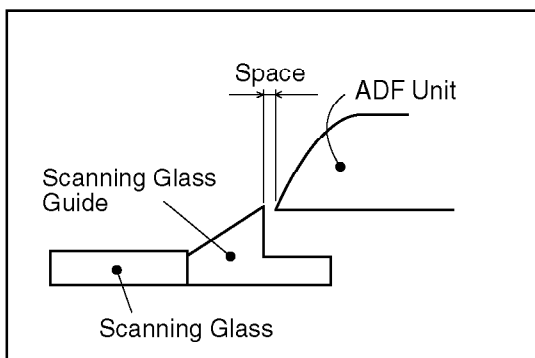


(22) Using a 20 lb (80 g/m<sup>2</sup>) lined original, make a copy from the ADF to check the feed alignment.

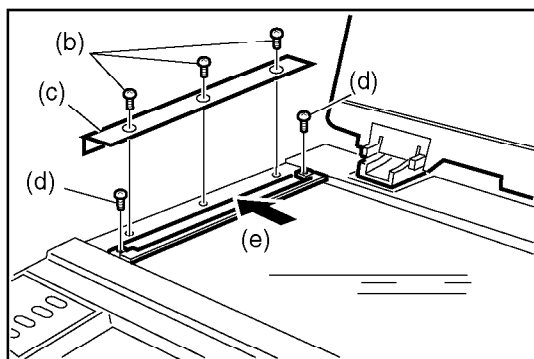


(23) Check the printed copy. If the printed image is skewed either to the Right or Left, adjust the ADF position following the procedure below:

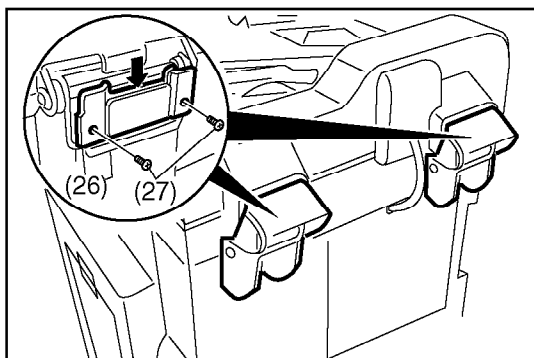
- a. Loosen the 5 Screws securing the ADF.
- b. Using the Hallmark on the Right Hinge Base and the ADF Mounting Bracket as a guide, shift the ADF position by following the procedure below:
  - When the printed image is skewed to the right, shift the ADF slightly toward the front of the machine.
  - When the printed image is skewed to the left, shift the ADF slightly toward the rear of the machine.
- c. Tighten the 5 Screws loosened in step (23a).
- d. Repeat step (22) to recheck the feed alignment and readjust the ADF position as needed.



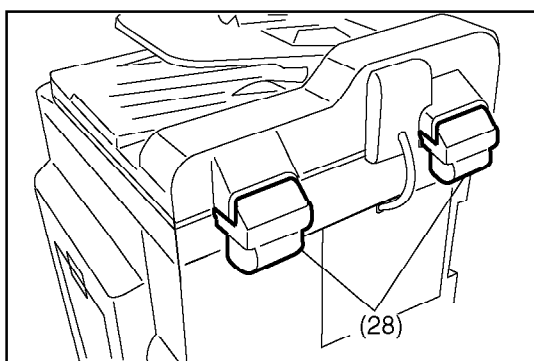
(24) Check the space between the ADF Unit and the Scanning Glass Guide as illustrated.



- (25) If there is no space, adjust the Platen Glass position by following the procedure below:
- Open the ADF Unit.
  - Remove 3 Silver Screws.
  - Remove the Left Platen Cover.
  - Loosen 2 Screws.
  - Shift the Scanning Glass Guide to the left and tighten the 2 Screws.
  - Re-install the Left Platen Cover and secure it with 3 Silver Screws.



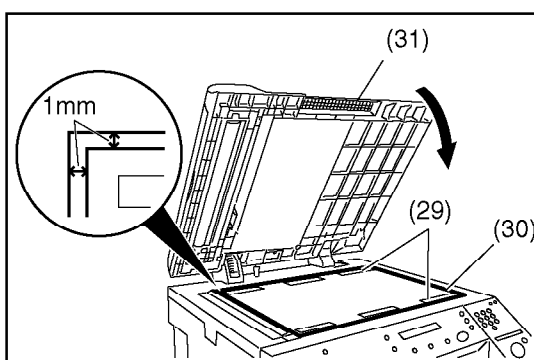
- (26) Install the 2 Hinge Stoppers.  
(27) Secure the 2 Hinge Stoppers with 4 Screws (XTB3+8J).



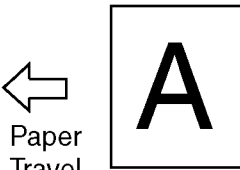
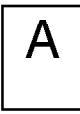

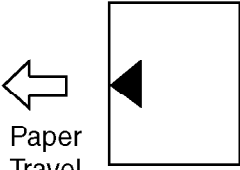

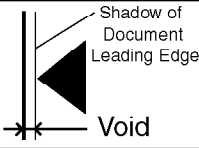
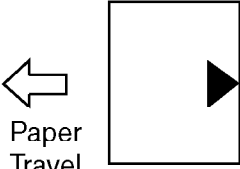

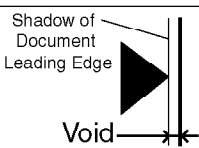
- (28) Install the 2 Hinge Covers.

**Note:**

When installing the Hinge Covers, make sure that a Hinge Film is placed inside of each Hinge Cover.

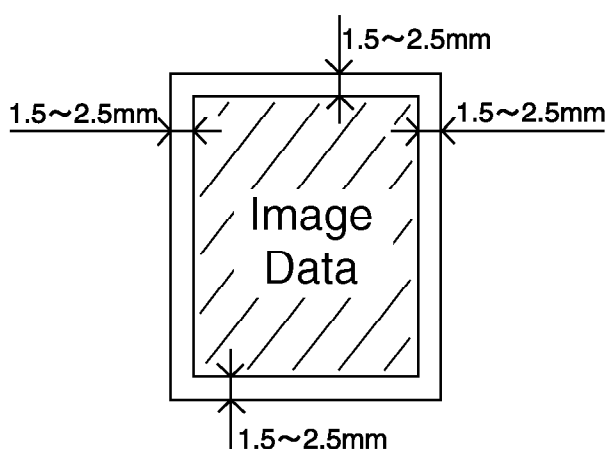


- (29) Peel off the 6 adhesive protectors from the Scanning Pad.  
(30) Place the Scanning Pad on the glass aligning it on the upper left corner, keeping 1mm space as illustrated.  
(31) Close the Automatic Document Feeder.
- Note:**  
Re-open the ADF Unit and push the Scanning Pad gently to paste it properly.
- (32) Perform Service Mode F6 (No. 90, 91, 93 and 94) to adjust the ADF Scanning Position.

	Document	Printed Image	Adjustment	Adjustment Amount	Remarks
No. 90 ADF Detection Timing (ADF Image Read Start Position Adjustment)			+	0.2mm / 1 Point	After setting the Parameter, reboot the machine to enable the Parameter Setting.
			-	0.2mm / 1 Point	
No. 91 ADF Original Leading Edge Registration (Original Lead Edge Detection Timing Adjustment)			-	0.2mm / 1 Point	Rebooting is not necessary to enable the Parameter Setting.
			+	0.2mm / 1 Point	
No. 93 ADF Original Trailing Edge Registration (Original Trail Edge Detection Timing Adjustment)			+	0.2mm / 1 Point	
			-	0.2mm / 1 Point	
No. 94 ADF Magnification Ratio (Top Feed) (Ratio Adjustment when the scan is made)	Reduced	+		0.1% / 1 Point	
	Enlarged	-		0.1% / 1 Point	

### < When Adjusting the ADF Unit >

Adjust the ADF Unit to scan the lined part (inside of the margin 1.5 - 2.5mm) on the document as shown on the right.



## 8.6. Installing the 2nd/3rd/4th Paper Feed Module (DA-DS182/183)

### 8.6.1. Contents

#### 2nd/4th Paper Feed Module (DA-DS182)

Qty.	Description	Part No.	Remarks
1	2nd/4th Paper Feed Module	See Note	
1	Paper Size Label	DZNK002813	For U.S.A. and Canada
		DZNK002814	For Other Destinations
2	Guide-Pin	DZJD000034	
5	Screw	XTB3+8J	
1	Harness, CST4	DZFP001313	
1	Installation Instructions	DZSM000521	

#### 3rd Paper Feed Module (DA-DS183)

Qty.	Description	Part No.	Remarks
1	3rd Paper Feed Module	See Note	
1	Paper Size Label	DZNK002813	For U.S.A. and Canada
		DZNK002814	For Other Destinations
2	Guide-Pin	DZJD000034	For U.S.A. and Canada
5	Screw	XTB3+8J	
1	Harness, CST4	DZFP001313	
1	Installation Instructions	DZSM000521	

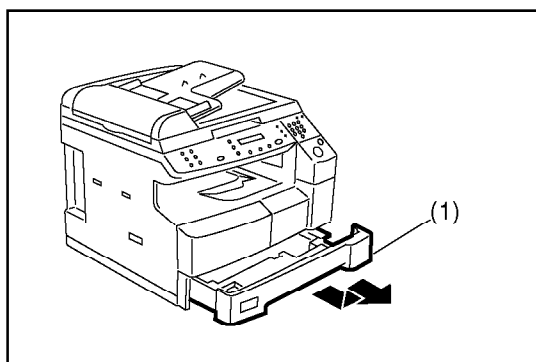
**Note:**

The part number differs depending on the Destination. Refer to the Parts Manual.

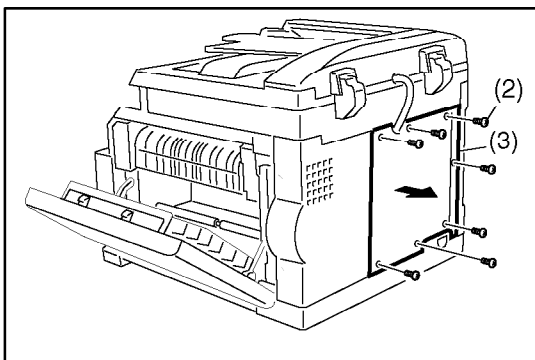
### 8.6.2. Installing the 2nd Paper Feed Module for the DP-1510P/1810P/1810F/2010E (Except DP-2010E for USA and Canada)

**Note:**

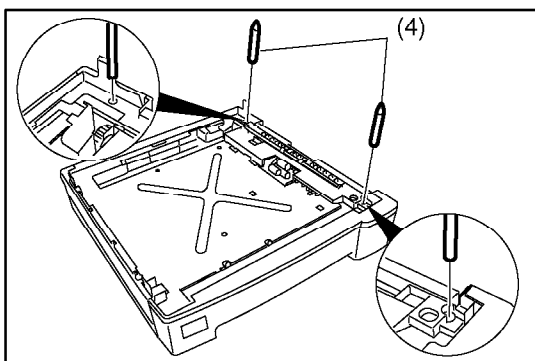
Turn the Power Switch to the OFF (O) position and unplug the AC Power Cord before beginning installation.



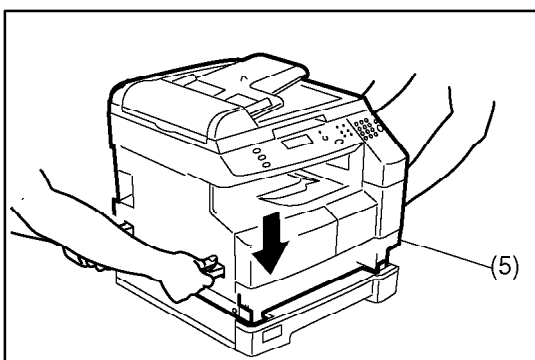
(1) Slide the Paper Tray all the way out.



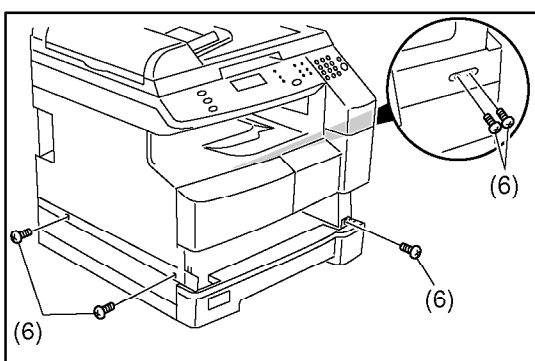
- (2) Remove 7 Silver Screws.
- (3) Remove the Rear Plate.



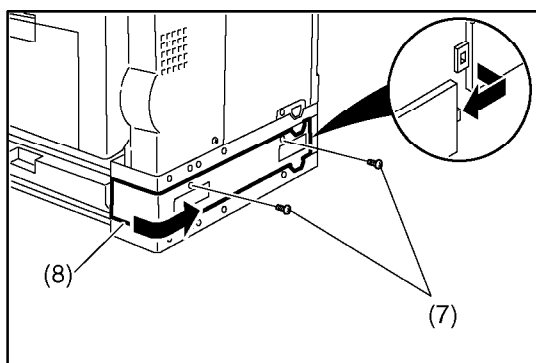
- (4) Install 2 Guide-Pins.



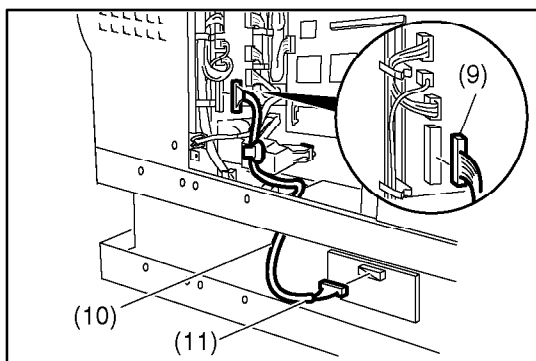
- (5) Place the machine on top of the 2nd Paper Feed Module as illustrated on the left.



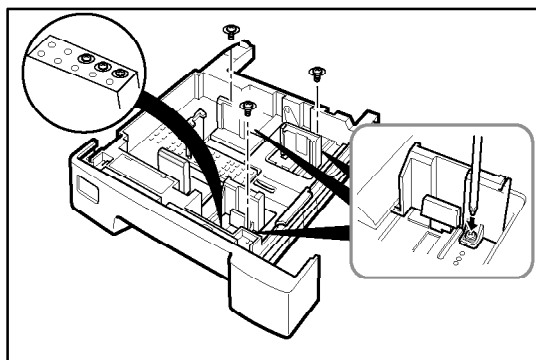
- (6) Secure the 2nd Paper Feed Module with 5 Screws (XTB3+8J).



- (7) Remove 2 Silver Screws  
(2nd Paper Feed Module).
- (8) Remove the CST Rear Cover.



- (9) Connect one end of the CST4 Harness (with Ferrite Core) to CN731 on the LPC3 PC Board.
- (10) Insert the other end of the harness through the bottom opening in the frame.
- (11) Connect the CST4 Harness to CN776 on the CST4 PC Board.
- (12) Re-install the all Covers.



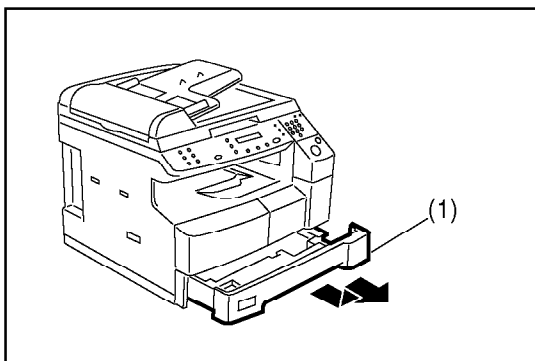
- (13) Set the Paper Size Guide.
- (14) Secure with 3 Screws which are stored inside of the Paper Tray, if necessary.



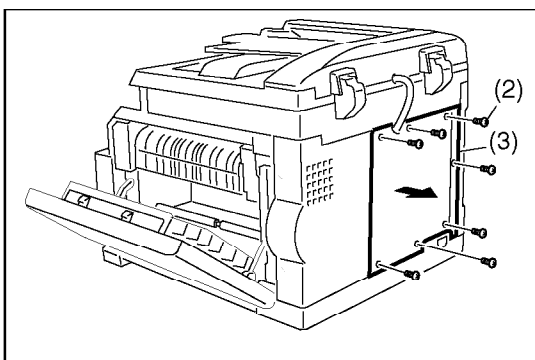
### 8.6.3. Installing the 2nd and 3rd Paper Feed Modules Together for DP-1810F/2010E (Except DP-2010E for USA and Canada)

**Note:**

Turn the Power Switch to the OFF (O) position and unplug the AC Power Cord before beginning installation.

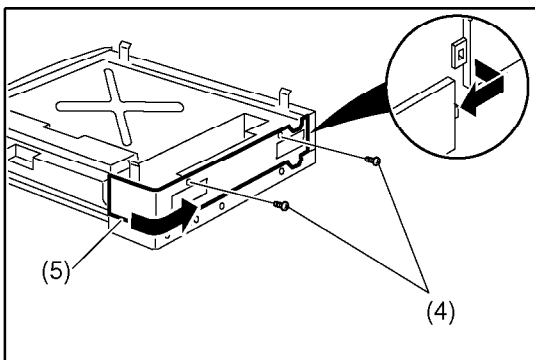


(1) Slide the Paper Tray all the way out.



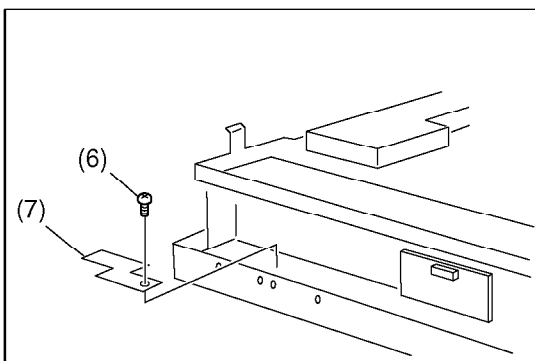
(2) Remove 7 Silver Screws.

(3) Remove the Rear Plate.



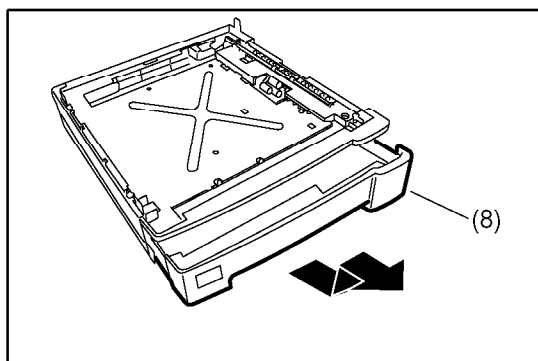
(4) Remove 2 Silver Screws  
(2nd Paper Feed Module).

(5) Remove the CST Rear Cover.

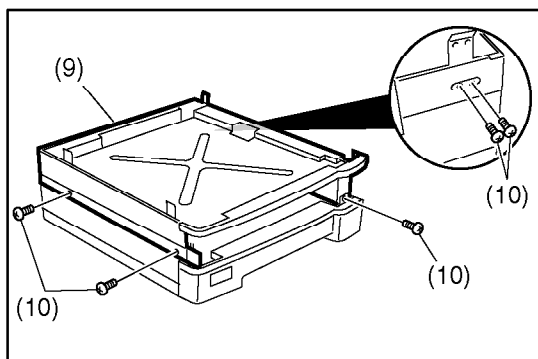


(6) Remove 1 Screw.

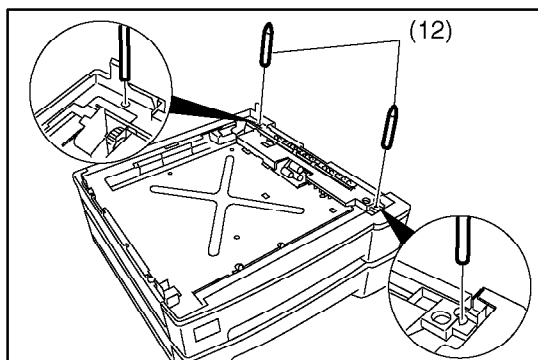
(7) Remove the Drive Cover 2 Bracket.



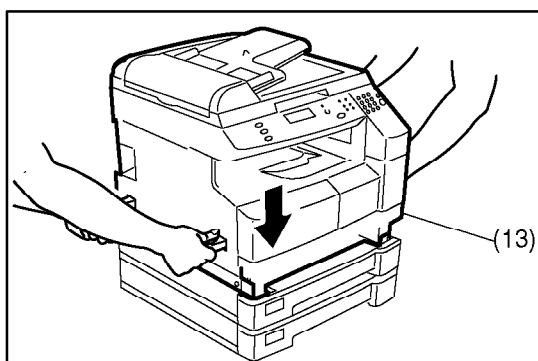
(8) Slide the 2nd Paper Tray all the way out.



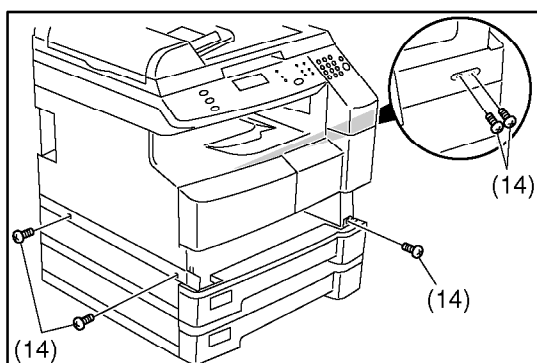
- (9) Place the 2nd Paper Feed Module on top of the 3rd Paper Feed Module as illustrated on the left.  
(10) Secure the 2nd Paper Feed Module with 5 Screws (XTB3+8J).  
(11) Re-install the 2nd Paper Tray.



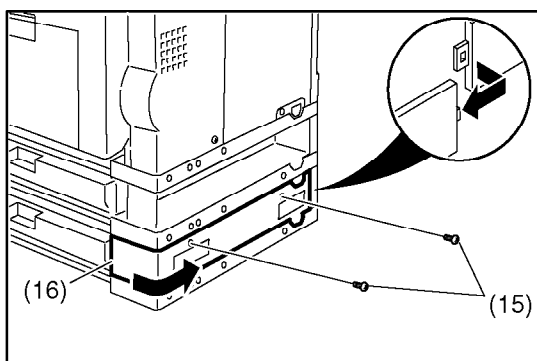
(12) Install 2 Guide-Pins.



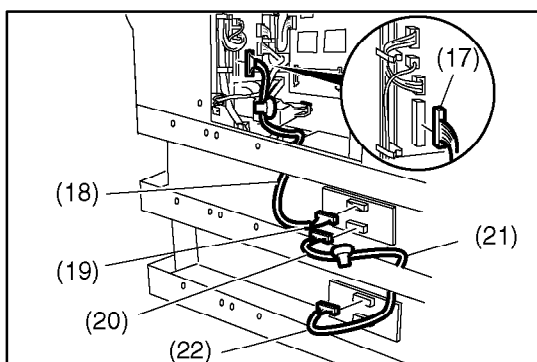
(13) Place the machine on top of the 2nd Paper Feed Module as illustrated on the left.



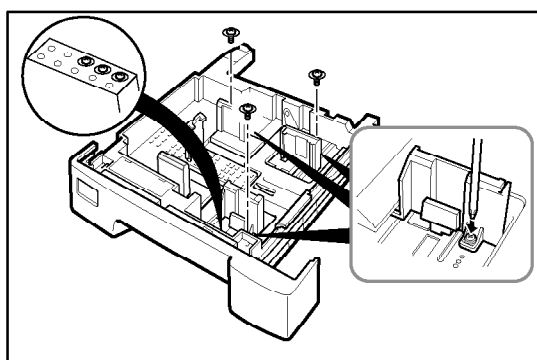
- (14) Secure the 2nd Paper Feed Module with 5 Screws (XTB3+8J).



- (15) Remove 2 Silver Screws (3rd Paper Feed Module).  
(16) Remove the CST Rear Cover.



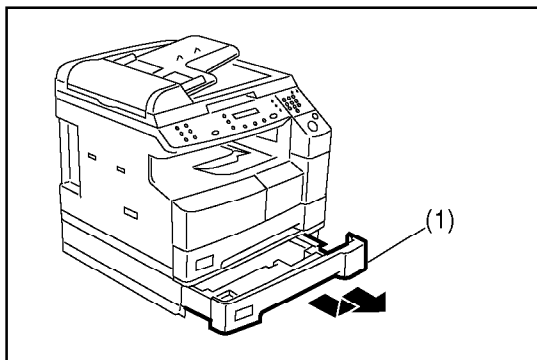
- (17) Connect one end of the CST4 Harness (with Ferrite Core) to CN731 on the LPC3 PC Board.  
(18) Insert the other end of the harness through the bottom opening in the frame.  
(19) Connect the CST4 Harness to CN776 on the CST4 PC Board of the 2nd Paper Feed Module.  
(20) Connect one end of the CST4 Harness (with Ferrite Core) to CN777 on the CST4 PC Board of the 2nd Paper Feed Module.  
(21) Insert the other end of the harness through the bottom opening in the frame.  
(22) Connect the CST4 Harness to CN776 on the CST4 PC Board of the 3rd Paper Feed Module.  
(23) Re-install the all Covers.  
(24) Set the Paper Size Guide.  
(25) Secure with 3 Screws which are stored inside of the Paper Tray, if necessary.



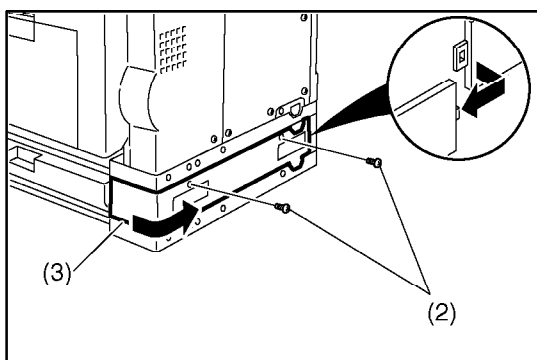
#### 8.6.4. Installing the 3rd Paper Feed Module for DP-2010E (For USA and Canada)

**Note:**

Turn the Power Switch to the OFF (O) position and unplug the AC Power Cord before beginning installation.

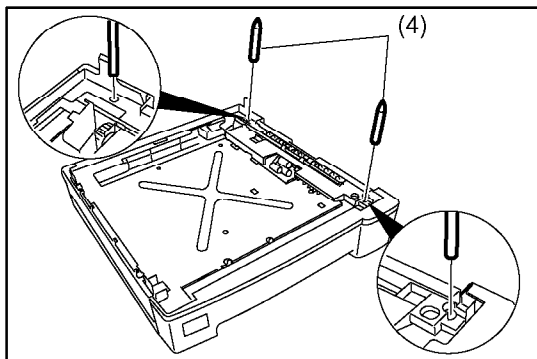


(1) Slide the 2nd Paper Tray all the way out.

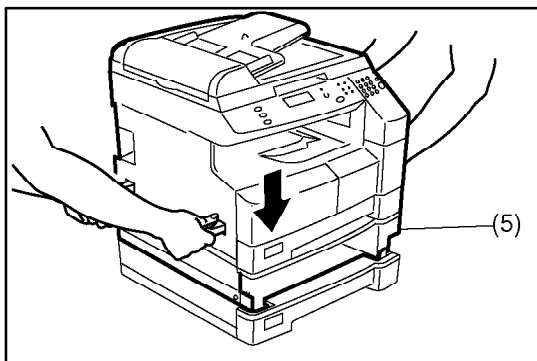


(2) Remove 2 Silver Screws  
(2nd Paper Feed Module).

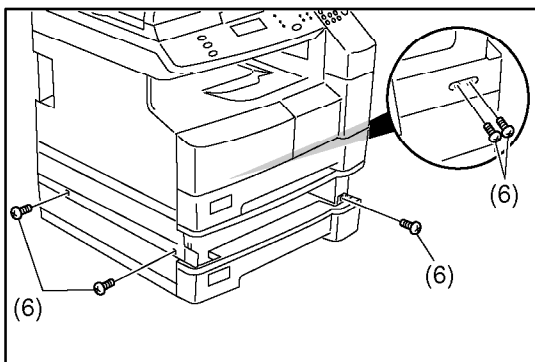
(3) Remove the CST Rear Cover.



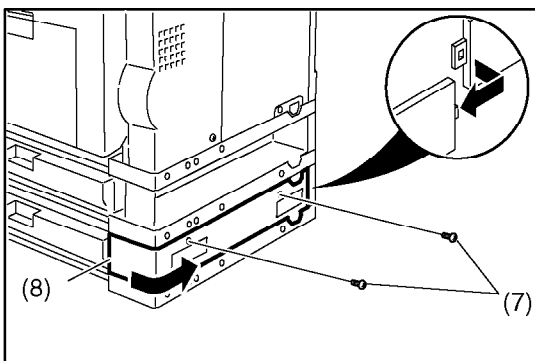
(4) Install 2 Guide-Pins.



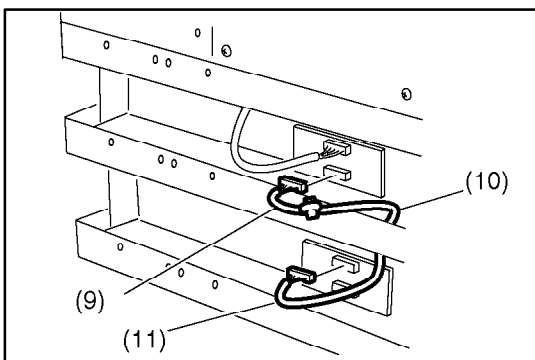
(5) Place the machine on top of the 3rd Paper Feed  
Module as illustrated on the left.



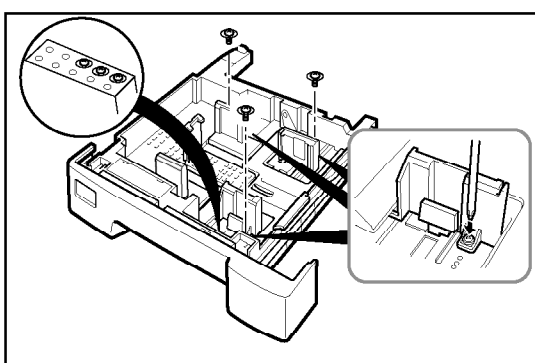
- (6) Secure the 3rd Paper Feed Module with 5 Screws (XTB3+8J).



- (7) Remove 2 Silver Screws (3rd Paper Feed Module).  
(8) Remove the CST Rear Cover.



- (9) Connect one end of the CST4 Harness (with Ferrite Core) to CN777 on the CST4 PC Board of the 2nd Paper Feed Module.  
(10) Insert the other end of the harness through the bottom opening in the frame.  
(11) Connect the CST4 Harness to CN776 on the CST4 PC Board of the 3rd Paper Feed Module.  
(12) Re-install the all Covers.

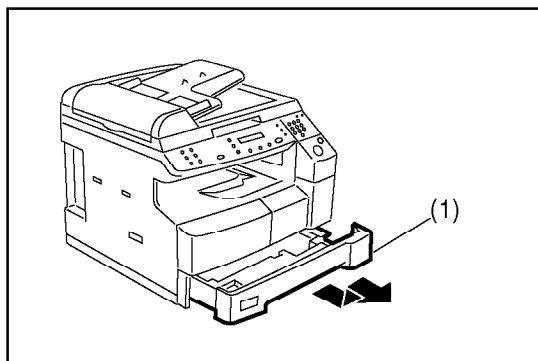


- (13) Set the Paper Size Guide.  
(14) Secure with 3 Screws which are stored inside of the Paper Tray, if necessary.

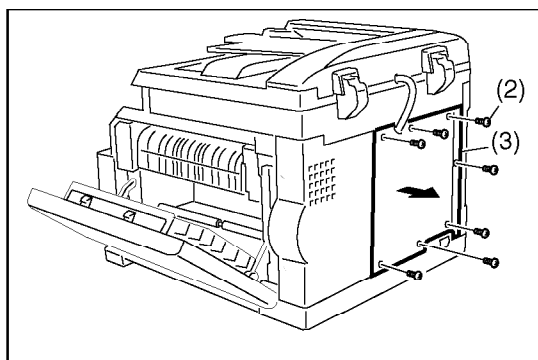
### 8.6.5. Installing the 2nd, 3rd and 4th Paper Feed Modules Together for DP-1810F/2010E (Except DP-2010E for USA and Canada)

**Note:**

Turn the Power Switch to the OFF (O) position and unplug the AC Power Cord before beginning installation.

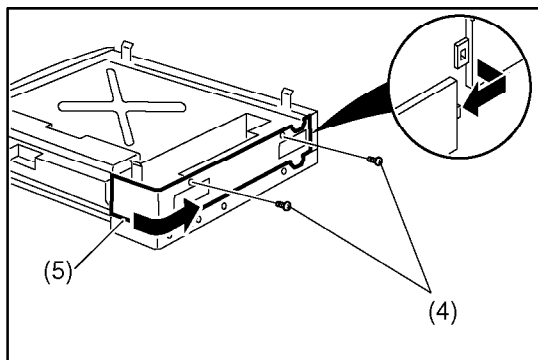


(1) Slide the Paper Tray all the way out.



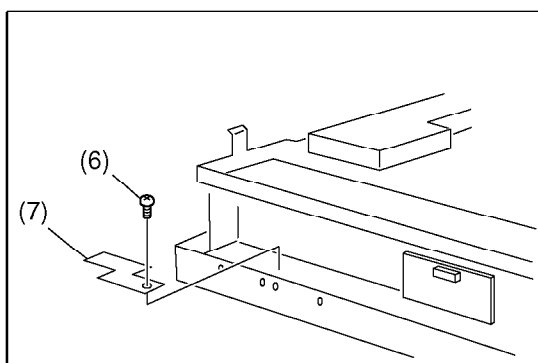
(2) Remove 7 Silver Screws.

(3) Remove the Rear Plate.



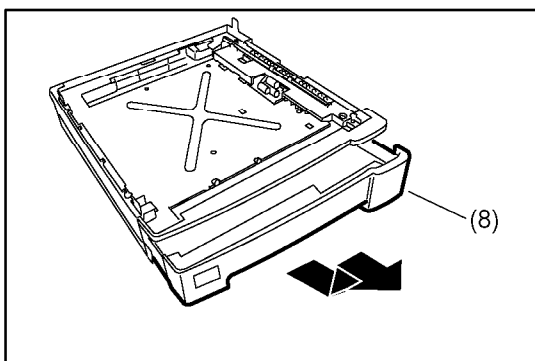
(4) Remove 2 Silver Screws  
(2nd Paper Feed Module).

(5) Remove the CST Rear Cover.

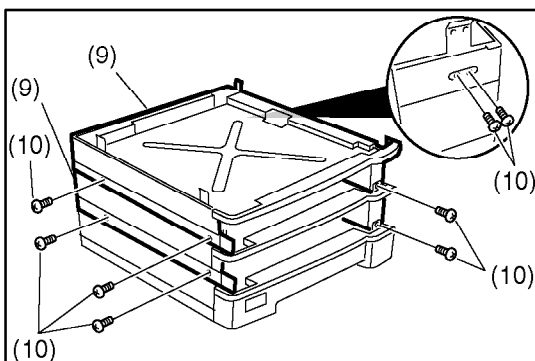


(6) Remove 1 Screw.

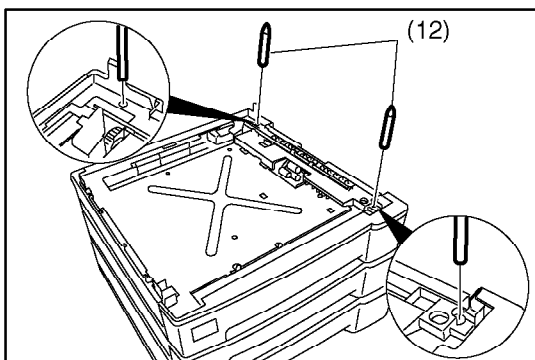
(7) Remove the Drive Cover 2 Bracket.



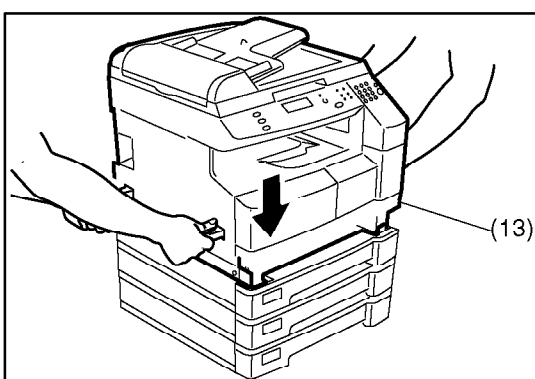
(8) Slide the 2nd and 3rd Paper Trays all the way out.



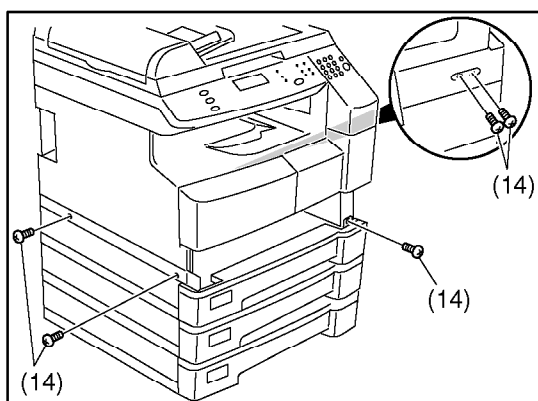
- (9) Place the 3rd Paper Feed Module on top of the 4th Paper Feed Module and then place the 2nd Paper Feed Module on top of the 3rd Paper Feed Module as illustrated on the left.
- (10) Secure the 2nd and 3rd Paper Feed Modules with 10 Screws (XTB3+8J).
- (11) Re-install the 2nd and 3rd Paper Trays.



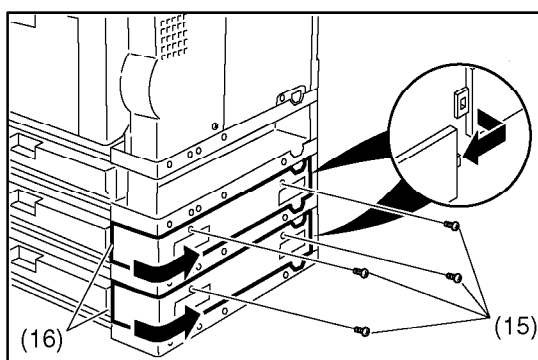
(12) Install 2 Guide-Pins.



(13) Place the machine on top of the 2nd Paper Feed Module as illustrated on the left.

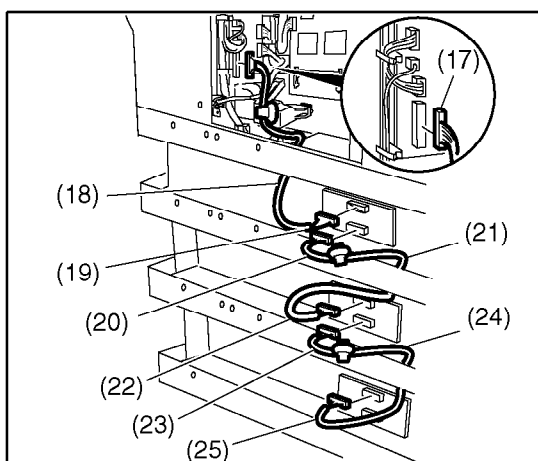


- (14) Secure the 2nd Paper Feed Module with 5 Screws (XTB3+8J).



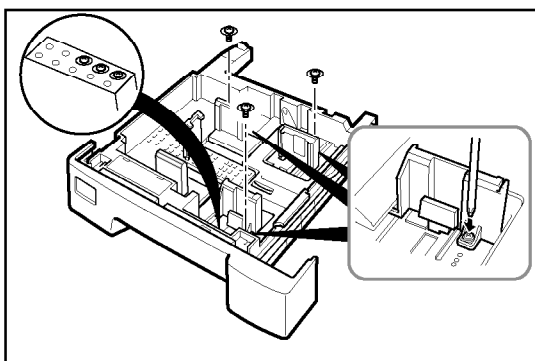
- (15) Remove 4 Silver Screws (3rd and 4th Paper Feed Modules).

- (16) Remove 2 CST Rear Covers.



- (17) Connect one end of the CST4 Harness (with Ferrite Core) to CN731 on the LPC3 PC Board.  
(18) Insert the other end of the harness through the bottom opening in the frame.  
(19) Connect the CST4 Harness to CN776 on the CST4 PC Board of the 2nd Paper Feed Module.  
(20) Connect one end of the CST4 Harness (with Ferrite Core) to CN777 on the CST4 PC Board of the 2nd Paper Feed Module.  
(21) Insert the other end of the harness through the bottom opening in the frame.  
(22) Connect the CST4 Harness to CN776 on the CST4 PC Board of the 3rd Paper Feed Module.  
(23) Connect one end of the CST4 Harness (with Ferrite Core) to CN777 on the CST4 PC Board of the 3rd Paper Feed Module.  
(24) Insert the other end of the harness through the bottom opening in the frame.  
(25) Connect the CST4 Harness to CN776 on the CST4 PC Board of the 4th Paper Feed Module.  
(26) Re-install the all Covers.





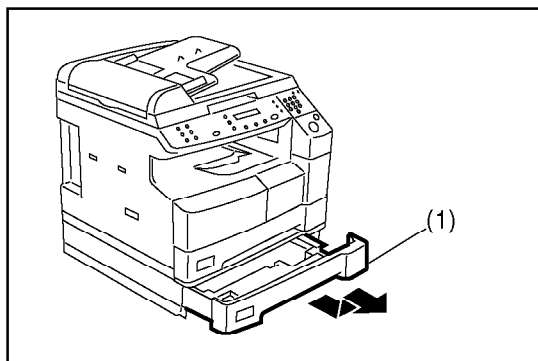
(27) Set the Paper Size Guide.

(28) Secure with 3 Screws which are stored inside of the Paper Tray, if necessary.

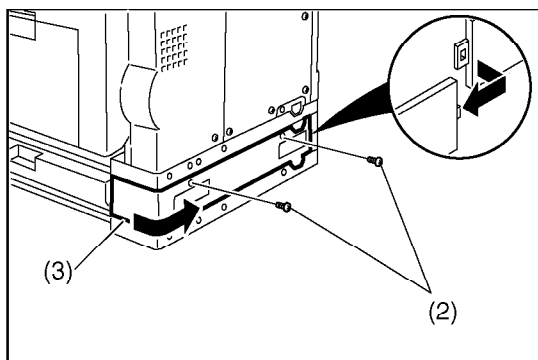
### 8.6.6. Installing the 3rd and 4th Paper Feed Modules Together for DP-2010E (For USA and Canada)

**Note:**

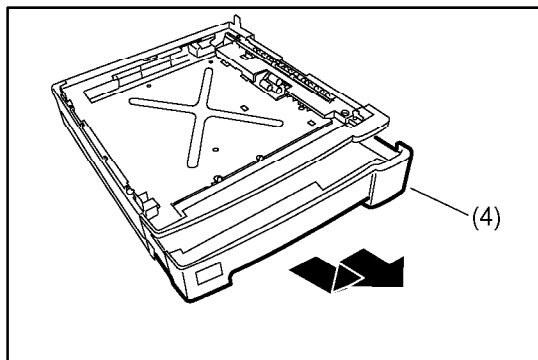
Turn the Power Switch to the OFF (O) position and unplug the AC Power Cord before beginning installation.



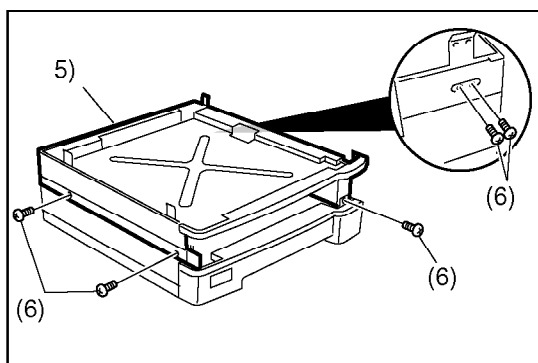
(1) Slide the 2nd Paper Tray all the way out.



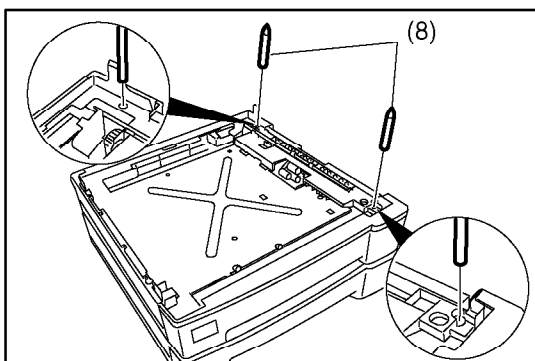
(2) Remove 2 Silver Screws  
(2nd Paper Feed Module).  
(3) Remove the CST Rear Cover.



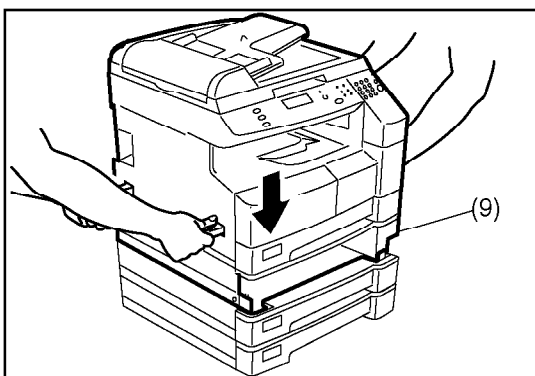
(4) Slide the 3rd Paper Tray all the way out.



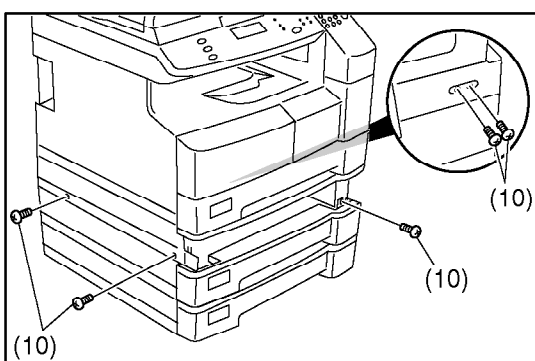
(5) Place the 3rd Paper Feed Module on top of the  
4th Paper Feed Module as illustrated on the left.  
(6) Secure the 3rd Paper Feed Module with 5  
Screws (XTB3+8J).  
(7) Re-install the 3rd Paper Tray.



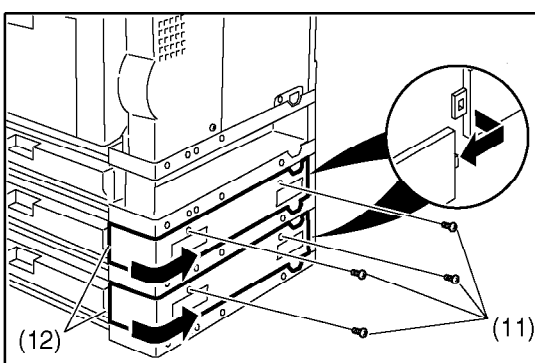
(8) Install 2 Guide-Pins.



(9) Place the machine on top of the 3rd Paper Feed Module as illustrated on the left.

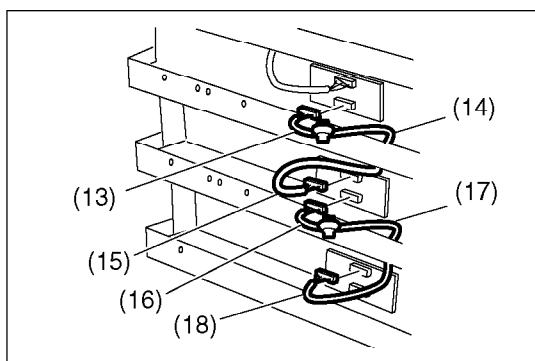


(10) Secure the 3rd Paper Feed Module with 5 Screws (XTB3+8J).

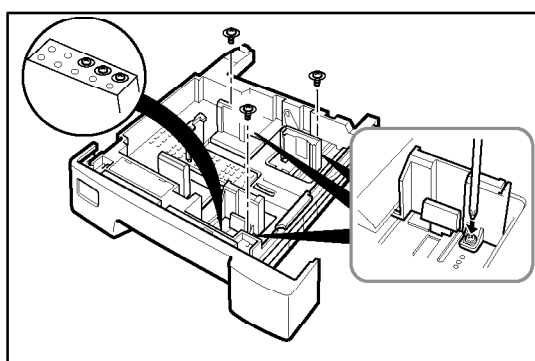


(11) Remove 4 Silver Screws (3rd and 4th Paper Feed Modules).

(12) Remove 2 CST Rear Covers.



- (13) Connect one end of the CST4 Harness (with Ferrite Core) to CN777 on the CST4 PC Board of the 2nd Paper Feed Module.
- (14) Insert the other end of the harness through the bottom opening in the frame.
- (15) Connect the CST4 Harness to CN776 on the CST4 PC Board of the 3rd Paper Feed Module.
- (16) Connect one end of the CST4 Harness (with Ferrite Core) to CN777 on the CST4 PC Board of the 3rd Paper Feed Module.
- (17) Insert the other end of the harness through the bottom opening in the frame.
- (18) Connect the CST4 Harness to CN776 on the CST4 PC Board of the 4th Paper Feed Module.
- (19) Re-install the all Covers.
- (20) Set the Paper Size Guide.
- (21) Secure with 3 Screws which are stored inside of the Paper Tray, if necessary.



## 8.7. Installing the Handset Kit

### 8.7.1. Contents

Qty.	Description	Part No.	Remarks
1	Handset	See Note	
1	Handset Cord	See Note	
1	Cradle Assembly	See Note	
1	Handset Cradle Stopper	DZSM000783	For UF-490 Only
1	Installation Instructions	DZSM000230	For U.S.A. and Canada
		DZSM000028	For Other Destinations

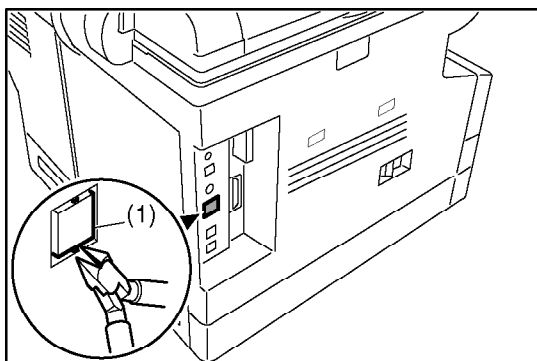
**Note:**

The part number differs depending on the Destination. Refer to the Parts Manual.

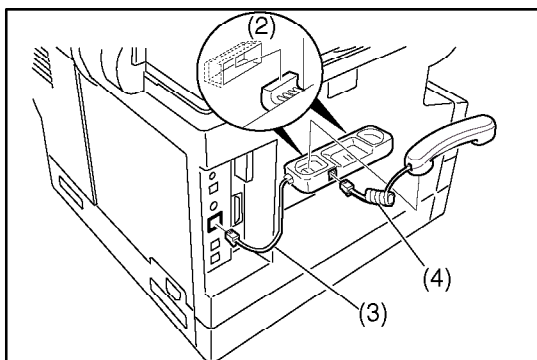
### 8.7.2. Installation for DP-1810F

**Note:**

Turn the Power Switch to the OFF (O) position and unplug the AC Power Cord and the Telephone Line Cable before beginning installation.



- (1) Break off the protective tab covering the **HANDSET Jack** on the Left Side Cover.





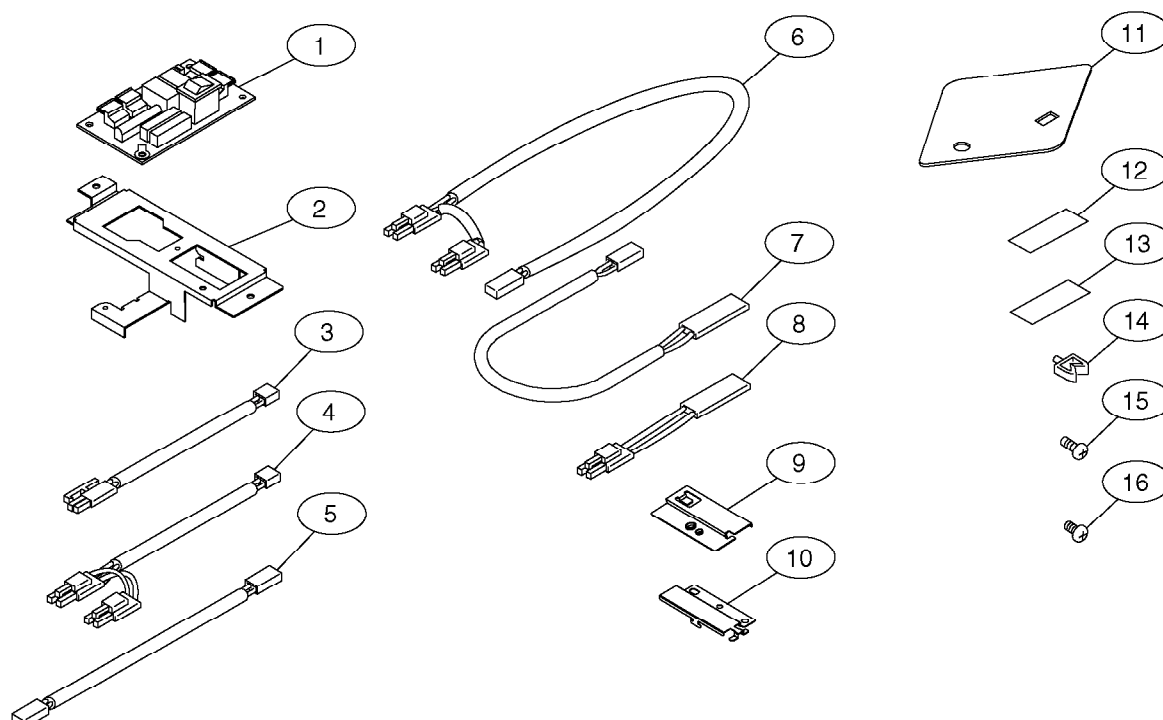
- (2) Hook the projections of the Cradle Assembly into the holes on the Left Cover.  
 (3) Connect the **Cradle Assembly Cable** into the **Handset Jack** on the Left Side Cover.  
 (4) Connect the **Handset Cord**.  
 (5) Re-connect the **Telephone Line Cable**, the Power Cord and turn the **Power Switch** to the **ON (I)** position.

## 8.8. Installing the Dehumidifier Heater Kit


### 8.8.1. Contents

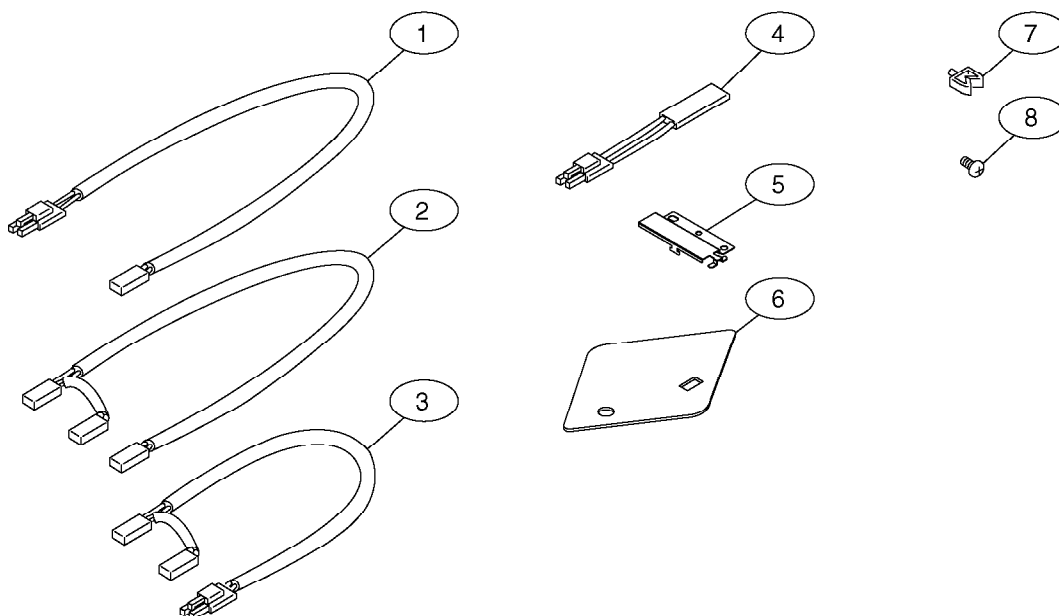
#### A. For Main Unit (DZTQ000032)

No.	Qty.	Description	Part No.	Remarks
1	1	RLB PC Board	DZEC102305	
2	1	RLB Bracket	DZJA001155	
3	1	PTC-AC Harness 1	DZFP001281	
4	1	PTC-AC Harness 2	DZFP001282	
5	1	PTC-AC Harness 3	DZFP001283	
6	1	PTC-AC Harness 4	DZFP001284	
7	1	Thermistor	DZFR000013	
8	2	PTC Heater	FFPCP0035	
9	2	Dehumidifier Bracket	DZJC000287	
10	1	Heater Bracket	FFPKD07791	
11	1	Protective Sheet	DZJM000511	
12	1	Heater Main Label	DZNK004136	
13	1	Switch Label	DZNK003898	
14	5	Clamp	DZJK000006	
15	6	Screw	XTB3+8J	
16	1	Screw	XTB3+4F	
-	1	Installation Instructions	DZSM000541	



**B. For 2nd/3rd/4th Paper Feed Module (DZTQ000033)**

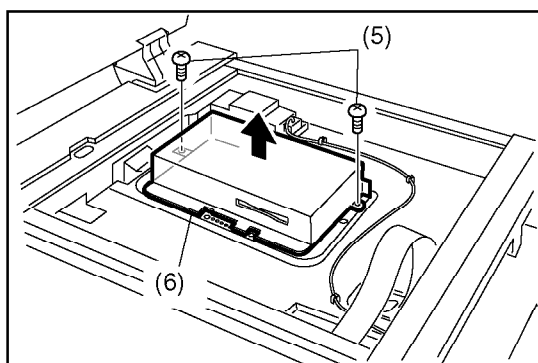
No.	Qty.	Description	Part No.	Remarks
1	3	PTC-AC Harness 6	DZFP001315	
2	1	PTC-AC Harness 7	DZFP001341	
3	2	PTC-AC Harness 8	DZFP001342	
4	3	PTC Heater	FFPCP0035	
5	3	Heater Bracket	FFPKD07791	
6	3	Protective Sheet	DZJM000511	
7	18	Clamp	DZJK000006	
8	3	Screw	XTB3+4F	
-	1	Installation Instructions	DZSM000541	



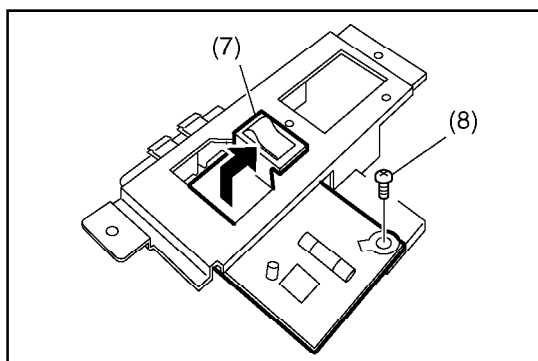
## 8.8.2. Installation

### Note:

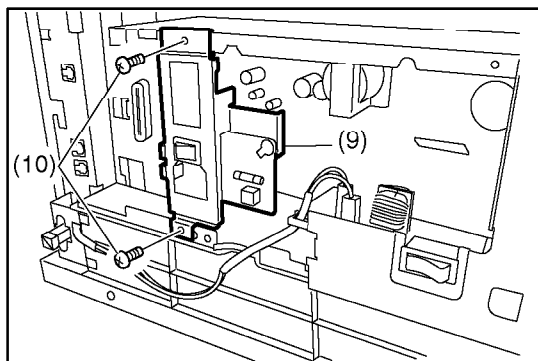
Turn the Power Switch to the OFF (O) position and unplug the AC Power Cord before beginning installation.



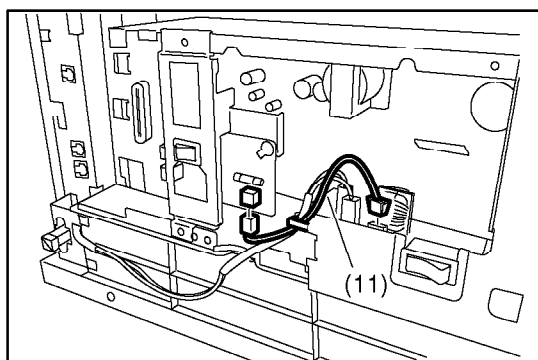
- (1) Remove the Process Unit.  
(Refer to ch 2.2.1 of the Service Manual)
- (2) Remove the Front Cover, Inner Cover J, Left Side Cover and Rear Plate.  
(Refer to ch 2.2.3. of the Service Manual)
- (3) Remove the LSU, LVPS Plate Assembly, Fan, Upper and Lower Fan Bracket.  
(Refer to ch 2.2.6. of the Service Manual)
- (4) Remove the Glass L Assembly.  
(Refer to ch 2.2.5. of the Service Manual)
- (5) Remove 2 Screws.
- (6) Remove the CCD Cover.



- (7) Mount the RLB PC Board onto the RLB Bracket as illustrated.
- (8) Secure the RLB PC Board with 1 Screw.

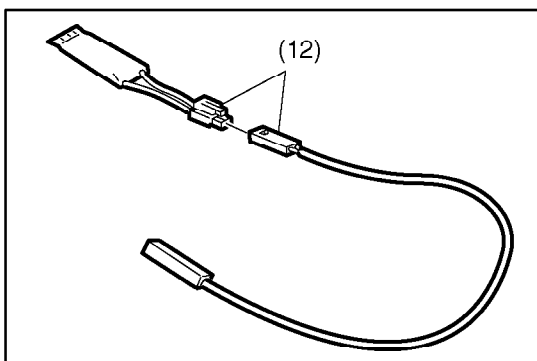


- (9) Install the RLB PC Board Assembly.
- (10) Secure the RLB PC Board Assembly with 2 Screws.

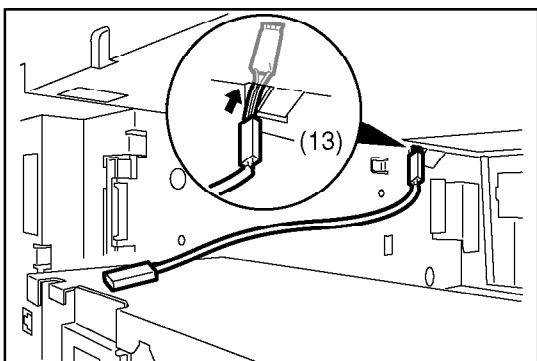


- (11) Connect the PTC-AC Harness 1 to CN171 on the RLB PC Board and to CN736 on the HTC PC Board.

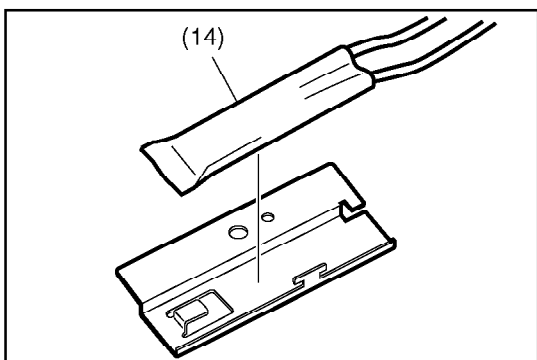




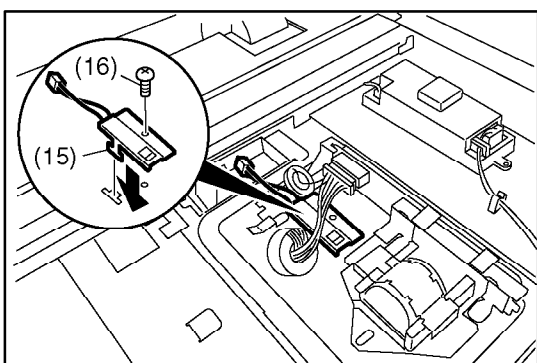
(12) Connect the PTC Heater to the PTC-AC Harness 3.



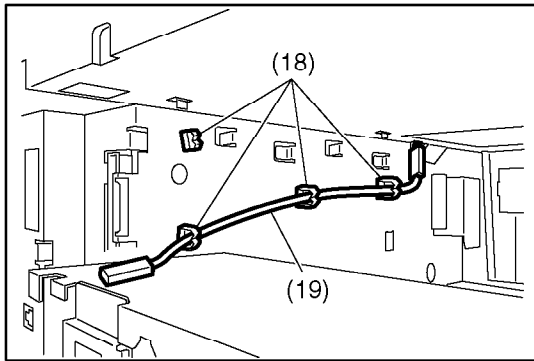
(13) Route the PTC Heater to the upper component of the frame through the access hole as illustrated.



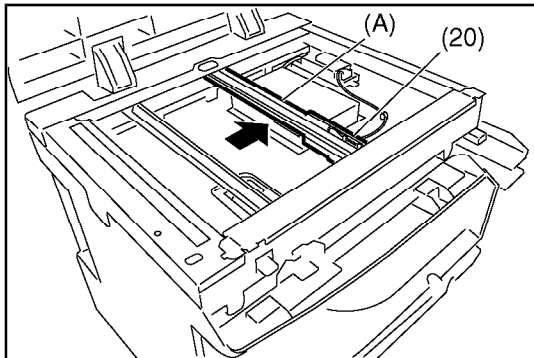
(14) Mount the PTC Heater onto the Dehumidifier Bracket.



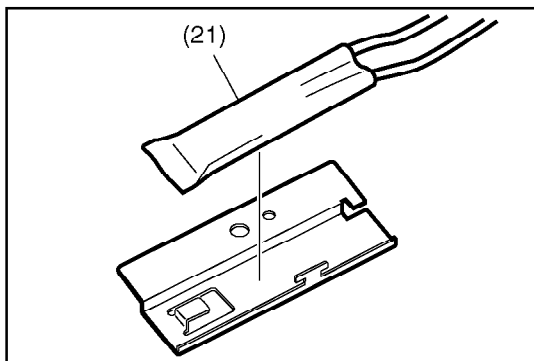
(15) Install the PTC Heater Assembly.  
(16) Secure the PTC Heater Assembly with 1 Screw.  
(17) Re-install the CCD Cover.



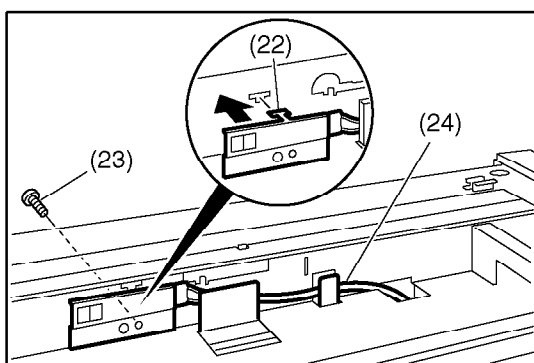
- (18) Install 4 Clamps as illustrated.
- (19) Insert the PTC-AC Harness 3 into 3 Clamps.



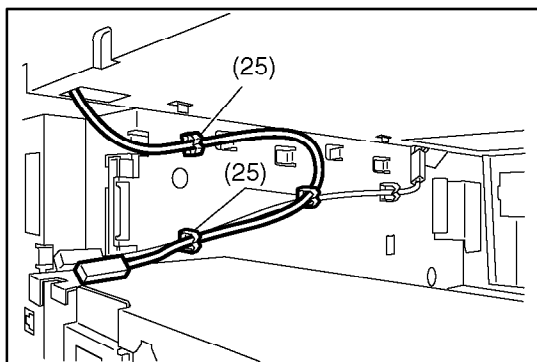
- (20) Move the Lamp Base Assembly slowly toward the right, positioning the bracket near the center (Marked by (A) as illustrated).



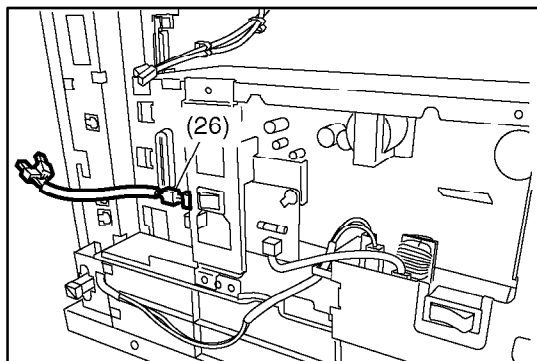
- (21) Mount the Thermistor onto the Dehumidifier Bracket.



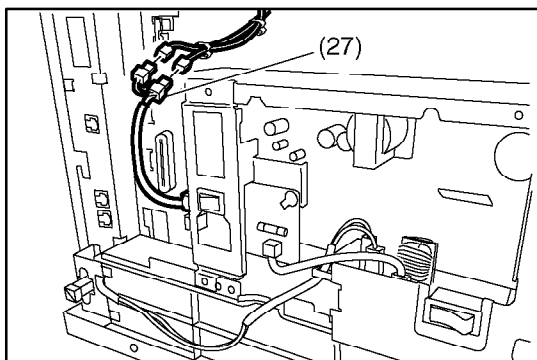
- (22) Install the Thermistor to the Scanner Base Frame as illustrated.
- (23) Secure the Thermistor with 1 Screw.
- (24) Route the Harness of the Thermistor behind the plate and into the access hole on the Scanner Base Frame as illustrated.



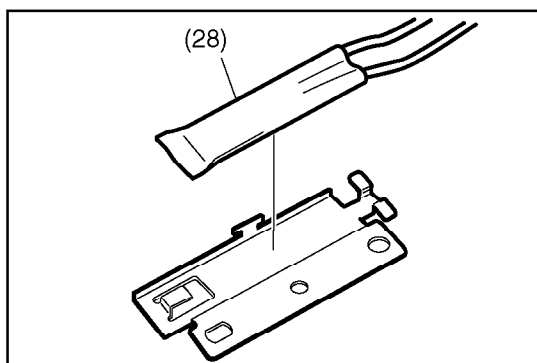
(25) Insert the Harness of the Thermistor into 3 Clamps as illustrated.



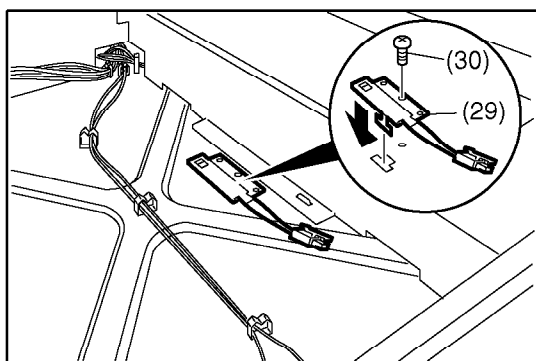
(26) Connect the PTC-AC Harness 2 to CN173 on the RLB PC Board.



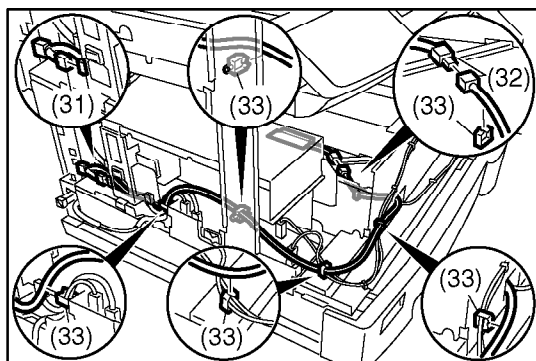
(27) Connect the Harness of the Thermistor and PTC-AC Harness 3 to PTC-AC Harness 2.



(28) Mount the PTC Heater onto the Heater Bracket.

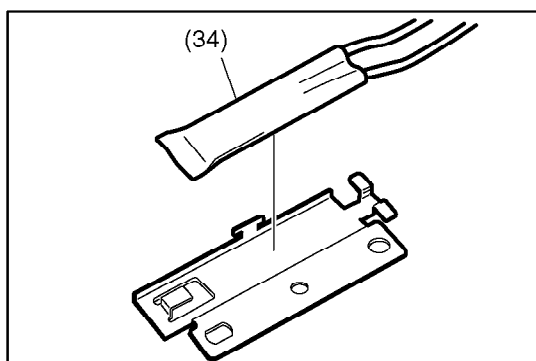


- (29) Install the PTC Heater Assembly.  
(30) Secure the PTC Heater Assembly with 1 Screw.

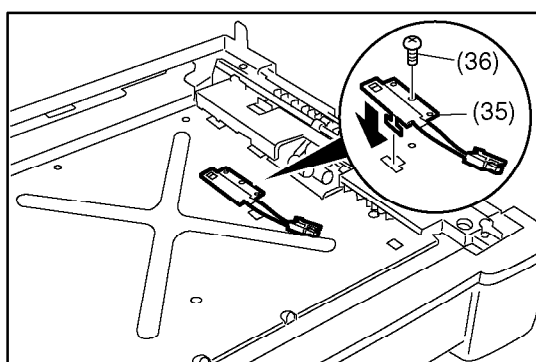


- (31) Connect the PTC-AC Harness 4 to CN172 on the RLB PC Board.  
(32) Connect the PTC-AC Harness 4 to PTC Heater Harness.  
(33) Insert the PTC-AC Harness 4 into 5 Clamps.

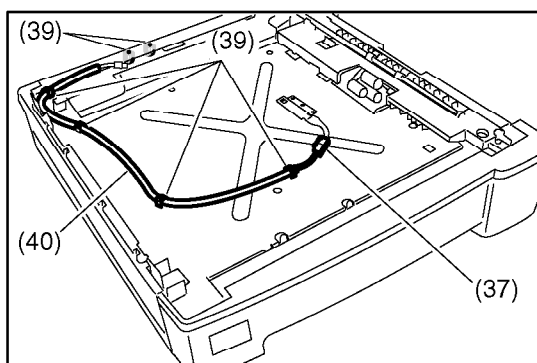
**Note:**  
If Optional Paper Feed Modules are not installed, skip to step (52).



- (34) Mount the PTC Heater onto the Heater Bracket.



- (35) Install the PTC Heater Assembly.  
(36) Secure the PTC Heater Assembly with 1 Screw.



(37) Connect the PTC Heater Harness to PTC-AC Harness 6.

(38) Remove the CST Rear Cover.  
(Refer to ch 8.5. of the Service Manual)

(39) Install 6 Clamps as illustrated.

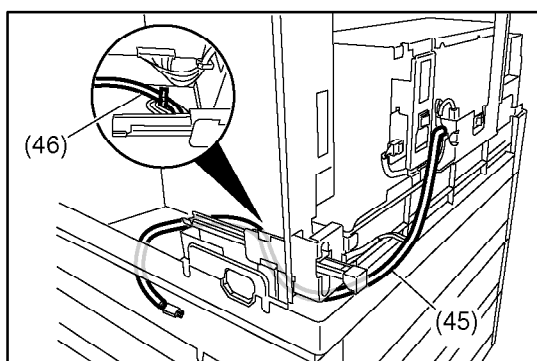
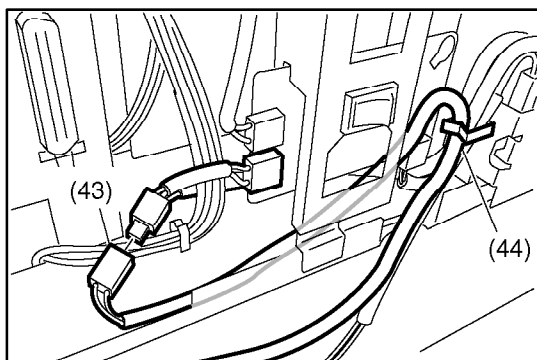
(40) Insert the PTC-AC Harness 6 into 4 Clamps.

(41) The procedure for 3rd and 4th Paper Feed Modules is the same as steps (34)~(40).

(42) Main Unit Assembly, 2nd, 3rd and 4th Paper Feed Modules.  
(Refer to ch 8.5. of the Service Manual)

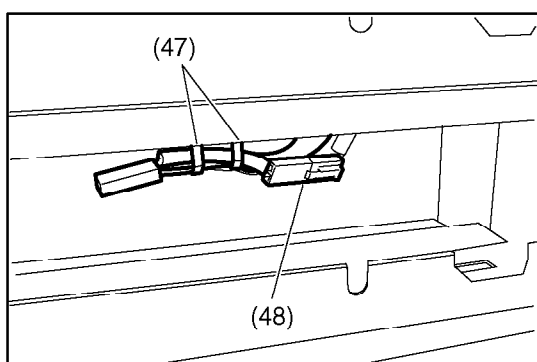
(43) Connect the PTC-AC Harness 7 to PTC-AC Harness 4.

(44) Insert the PTC-AC Harness 7 into the Clamp as illustrated.



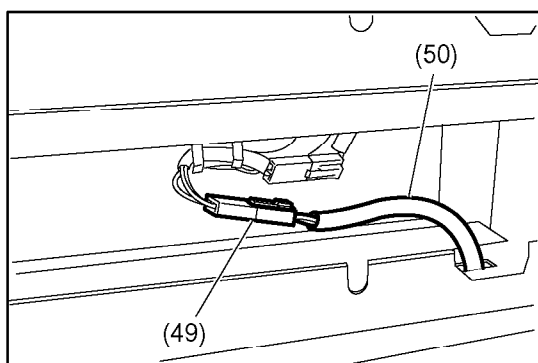
(45) Route the PTC-AC Harness 7 to the right side of the frame through the access hole as illustrated.

(46) Insert the PTC-AC Harness 7 into the Clamp as illustrated.

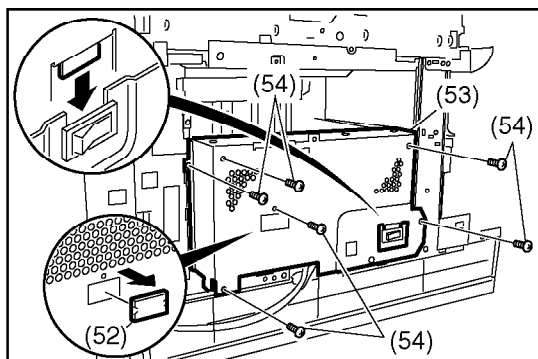


(47) Insert the PTC-AC Harness 7 into 2 Clamps as illustrated.

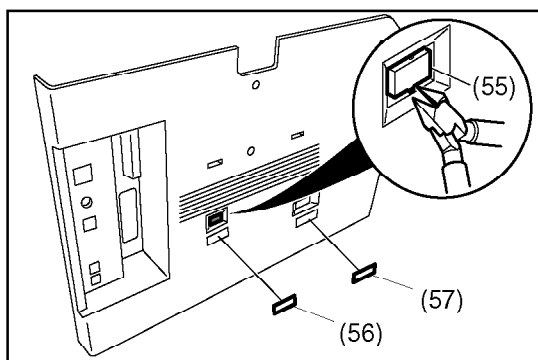
(48) Connect the PTC-AC Harness 7 to PTC-AC Harness 6.



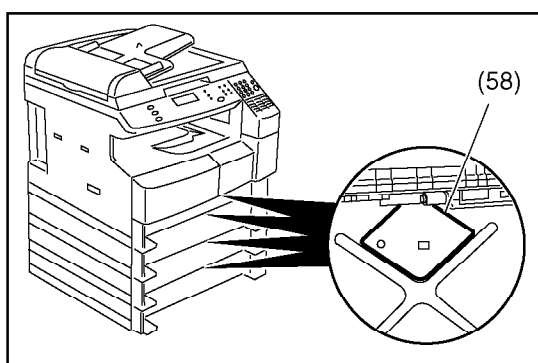
- (49) Connect the PTC-AC Harness 7 to PTC-AC Harness 8.
- (50) Insert the other end of the harness through the bottom opening in the frame.
- (51) The procedure for 3rd and 4th Paper Feed Modules is the same as steps (47)~(50).



- (52) Break off the protective tab on the LVPS Plate Assembly.
- (53) Re-install the LVPS Plate Assembly.
- (54) Secure the LVPS Plate Assembly with 6 Screws.



- (55) Break off the protective tab on the Left Side Cover.
- (56) Attach the Heater Label.
- (57) Attach the Switch Label.



- (58) Install the Protective Sheets.

## 8.9. Installing the Key Counter Cable Kit (DA-KH200)

### 8.9.1. Contents

**Note:**

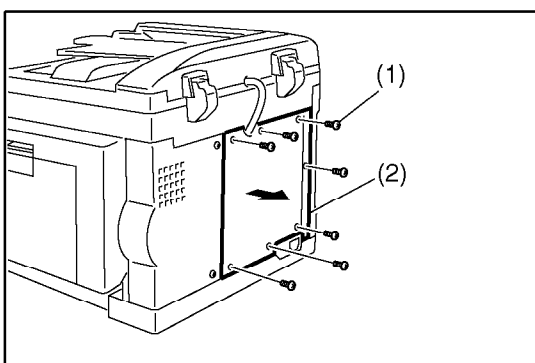
The Key Counter is sold separately.

Qty.	Description	Part No.	Remarks
1	KEY Harness	DZFP000928	Longer
1	KC Harness	FFPWC0392	Shorter
1	KC Bracket	DZJA000786	Not used
2	Screw	DZPA000063	Not used
1	Installation Instructions	DZSM000279	For DP-2000/2500 /3000

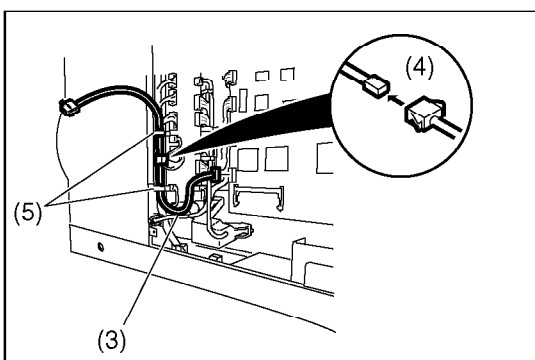
### 8.9.2. Installation

**Note:**

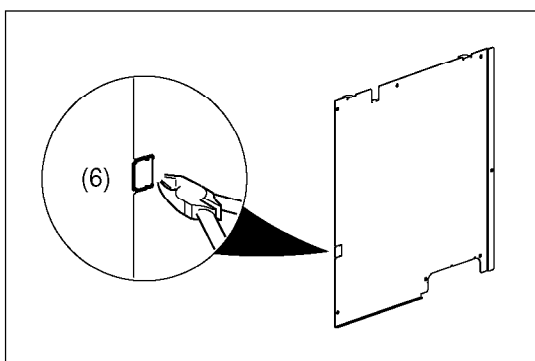
Turn the Power Switch to the OFF (O) position and unplug the AC Power Cord before beginning installation.



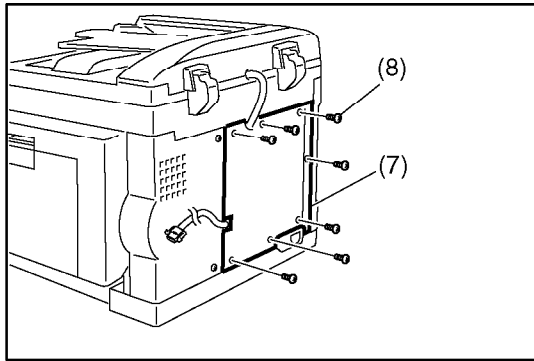
- (1) Remove 7 Screws.
- (2) Remove the Rear Plate.



- (3) Connect the KEY Harness to CN102 on the SC PC Board.
- (4) Connect the KEY Harness and KC Harness.
- (5) Place the Harness into the 2 clamps.



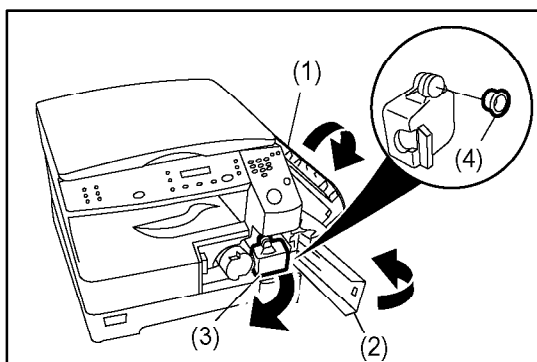
- (6) Brake off the protective tab by cutting pliers.



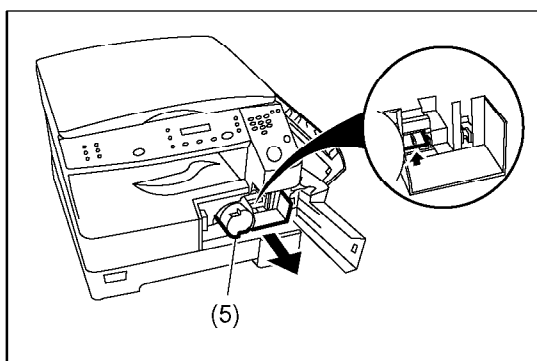
- (7) Re-install the Rear Plate as shown on the left.
- (8) Secure the Rear Plate with 7 Screws.



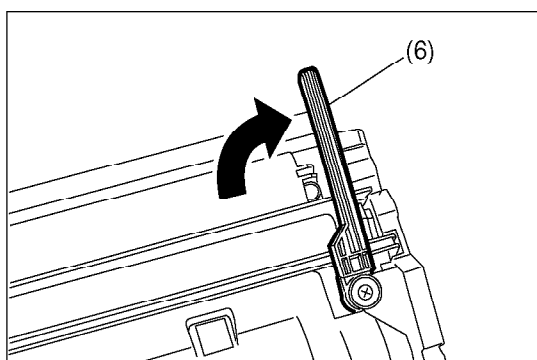
## 8.10. Replacing the OPC Drum



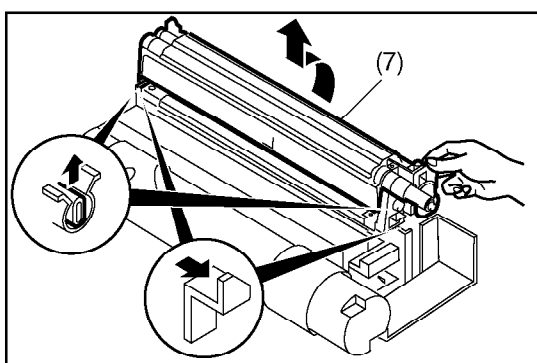
- (1) Open the Right Cover.
- (2) Open the Front Door Cover.
- (3) Remove the Toner Waste Container by slowly pulling it towards the left as illustrated.
- (4) Seal the Container with the enclosed cap and dispose of it properly.



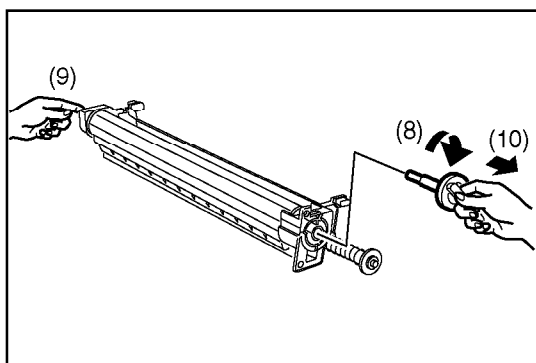
- (5) Pull up the Lever and remove the Process Unit.



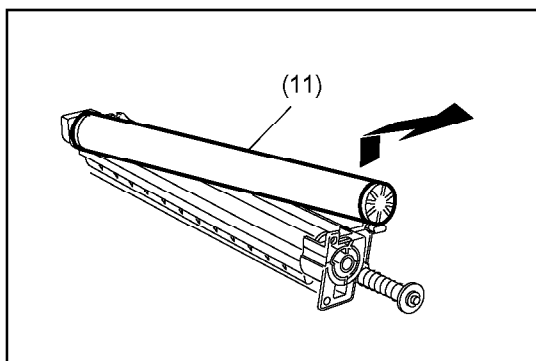
- (6) Open the bottom Leg as illustrated.



- (7) Release 2 OPC Latches and turn the OPC Drum Assembly in the direction of the arrow to remove.



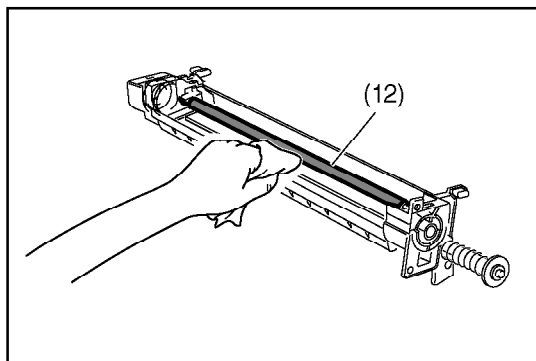
- (8) Unlock the Front OPC Bushing Assembly by turning it clockwise.
- (9) Push the OPC Drum forward from the rear end as illustrated.
- (10) Remove the Front OPC Bushing Assembly.



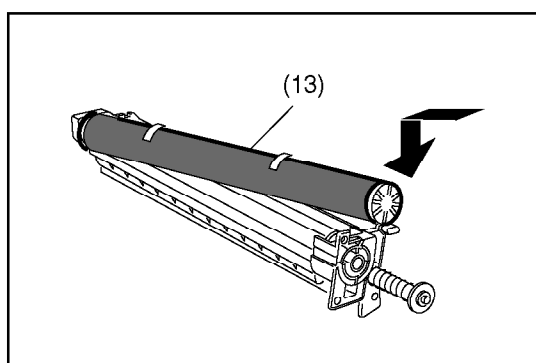
- (11) Remove the OPC Drum as shown in the illustration, holding by the front end where the Front OPC Bushing Assembly was installed.

**Note:**

Do not touch the surface of the OPC Drum with bare hands when removing or re-installing it. Grease from fingerprints will affect copy quality. When installing a new OPC Drum, clean the Bias Charge Roller with a soft dry cloth.



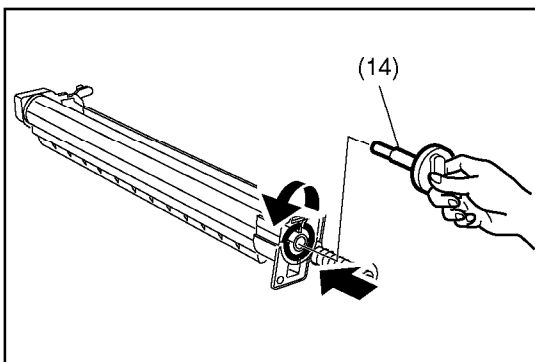
- (12) Clean the Bias Charge Roller with the soft dry cloth that came with the new OPC Drum.



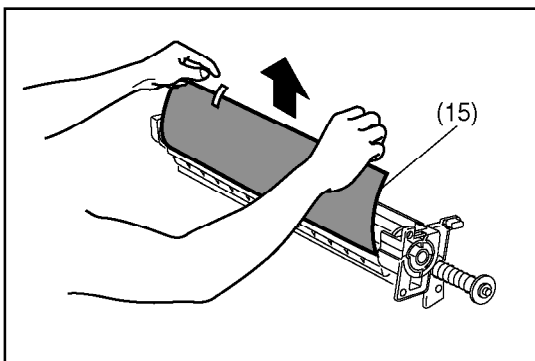
- (13) Install the new OPC Drum in the direction of the arrow.

**Note:**

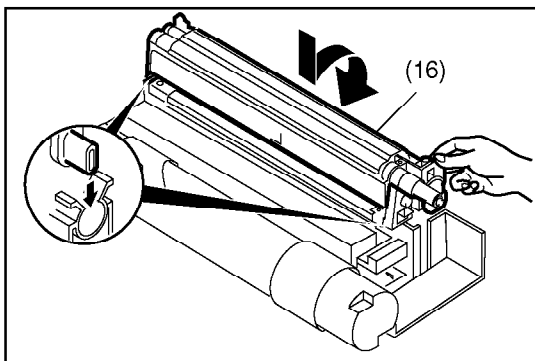
Leave the Protective Film in place.



- (14) Reinstall the Front OPC Bushing Assembly and turn it counter-clockwise to lock it in place.



- (15) Remove the Protective Film from the OPC Drum.



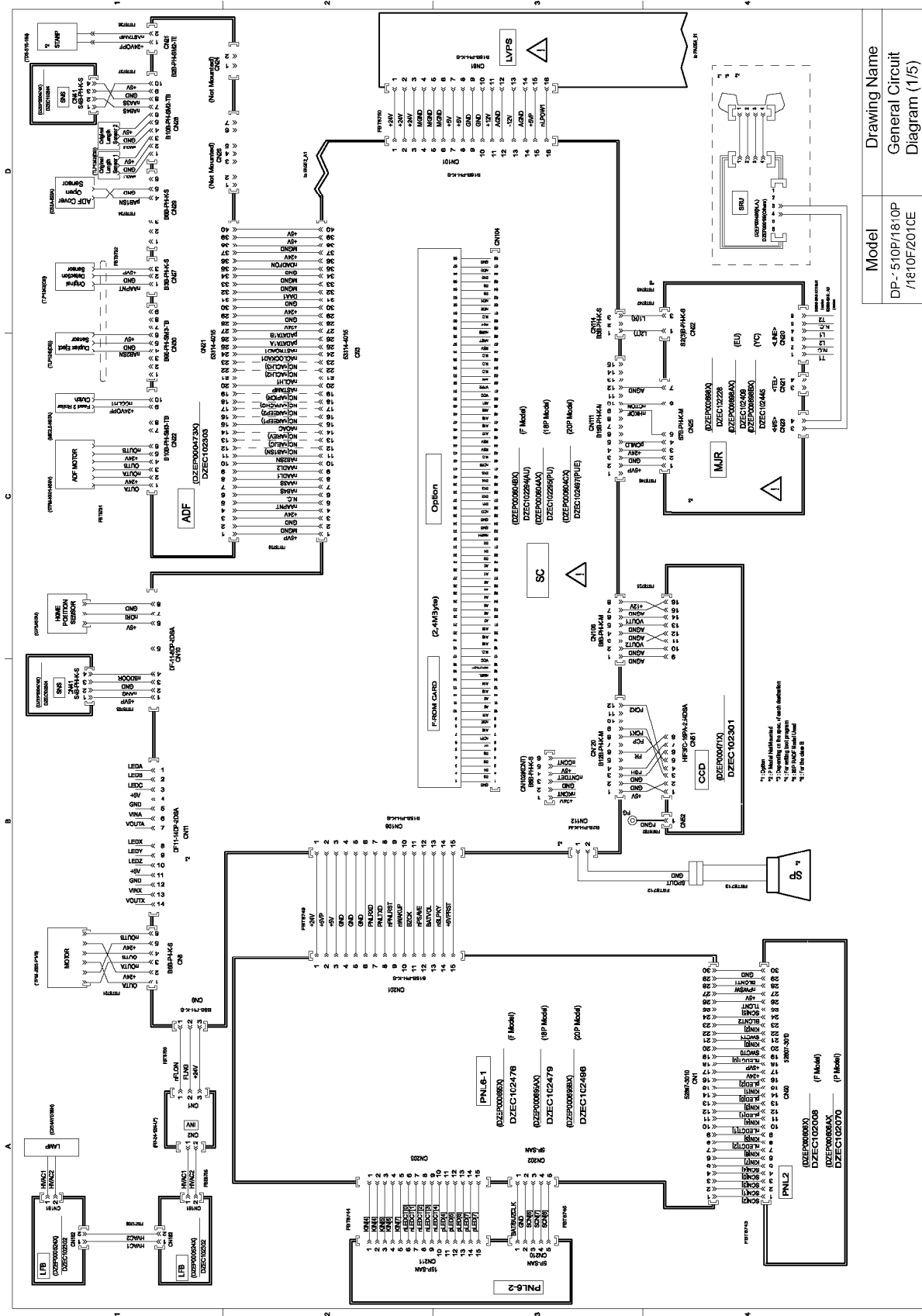
- (16) Turn the OPC Drum Assembly in the direction of the arrow until it locks by the 2 OPC Latches.

- (17) Reinstall the Process Unit, Toner Cartridge and the Toner Waste Container by following the instructions in Step 1 to 6 in reverse order.

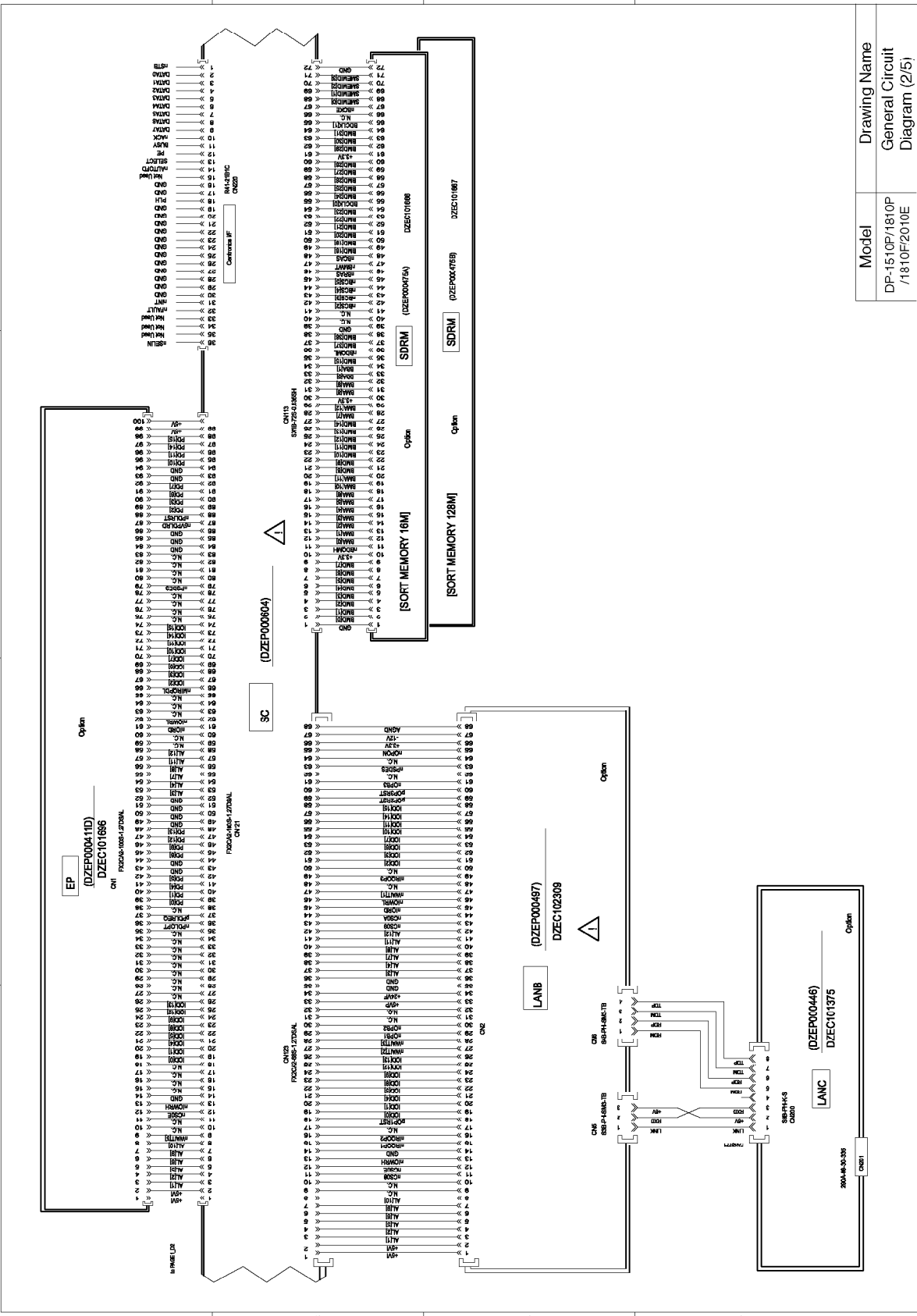
- (18) Clear the Drum Count in the General Functions  
- 09 (Key Operator Mode) - 15 (Clear Drum Count).

## 9 Schematic Diagram

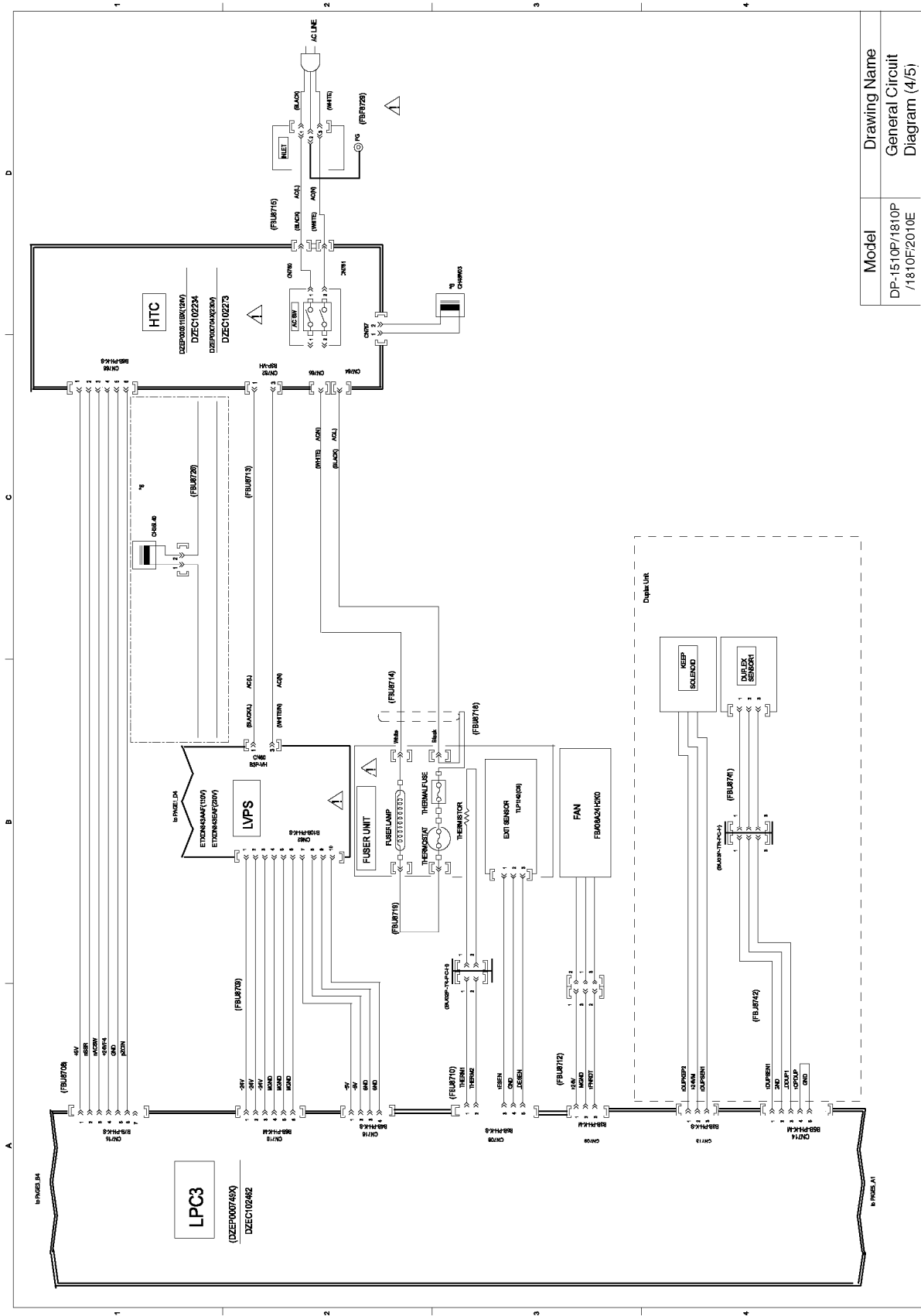
### 9.1. General Circuit Diagram System Circuit



Model	Drawing Name
DP-1510P/1810P /1810F/2010E	General Circuit Diagram (1/5)





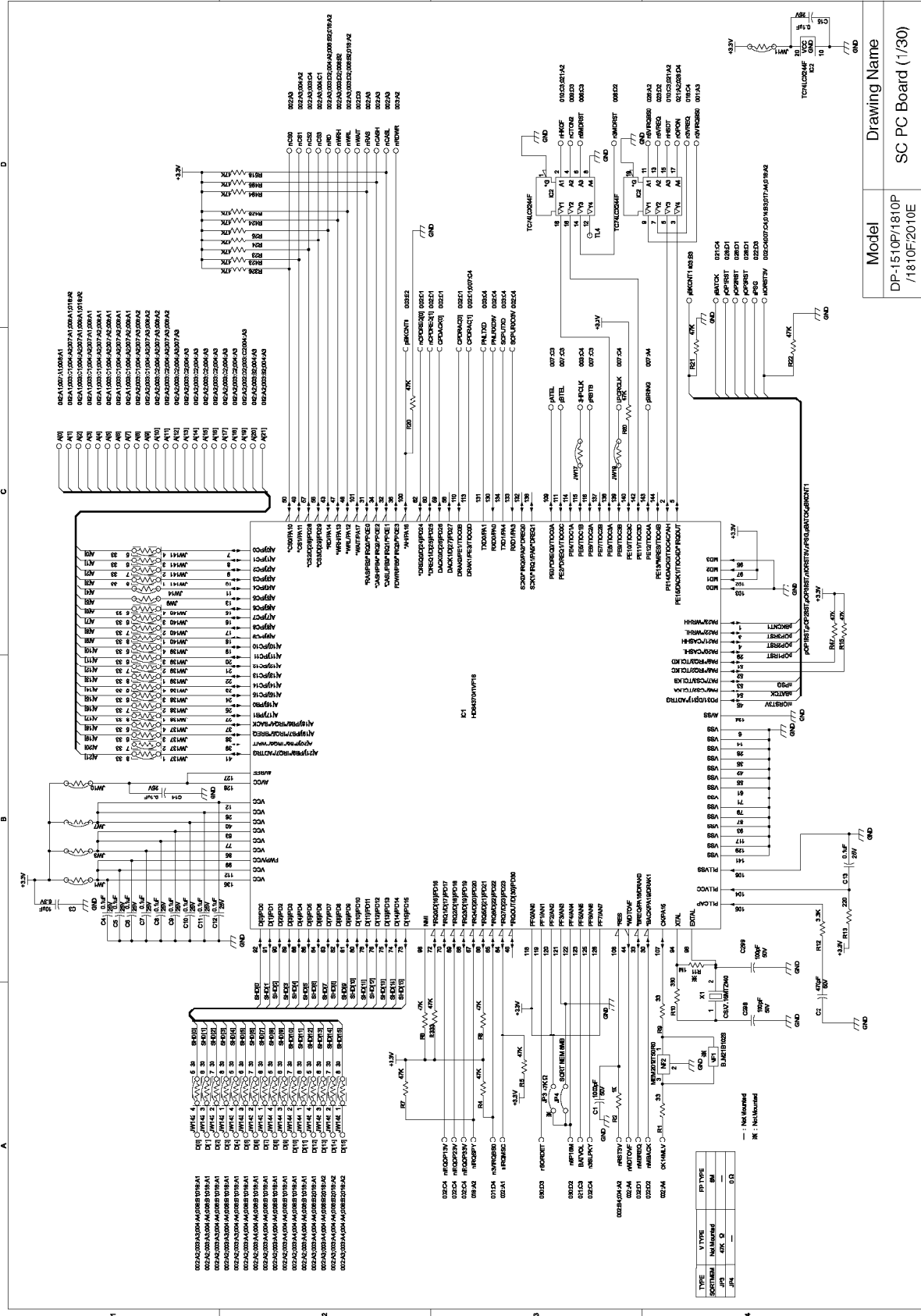


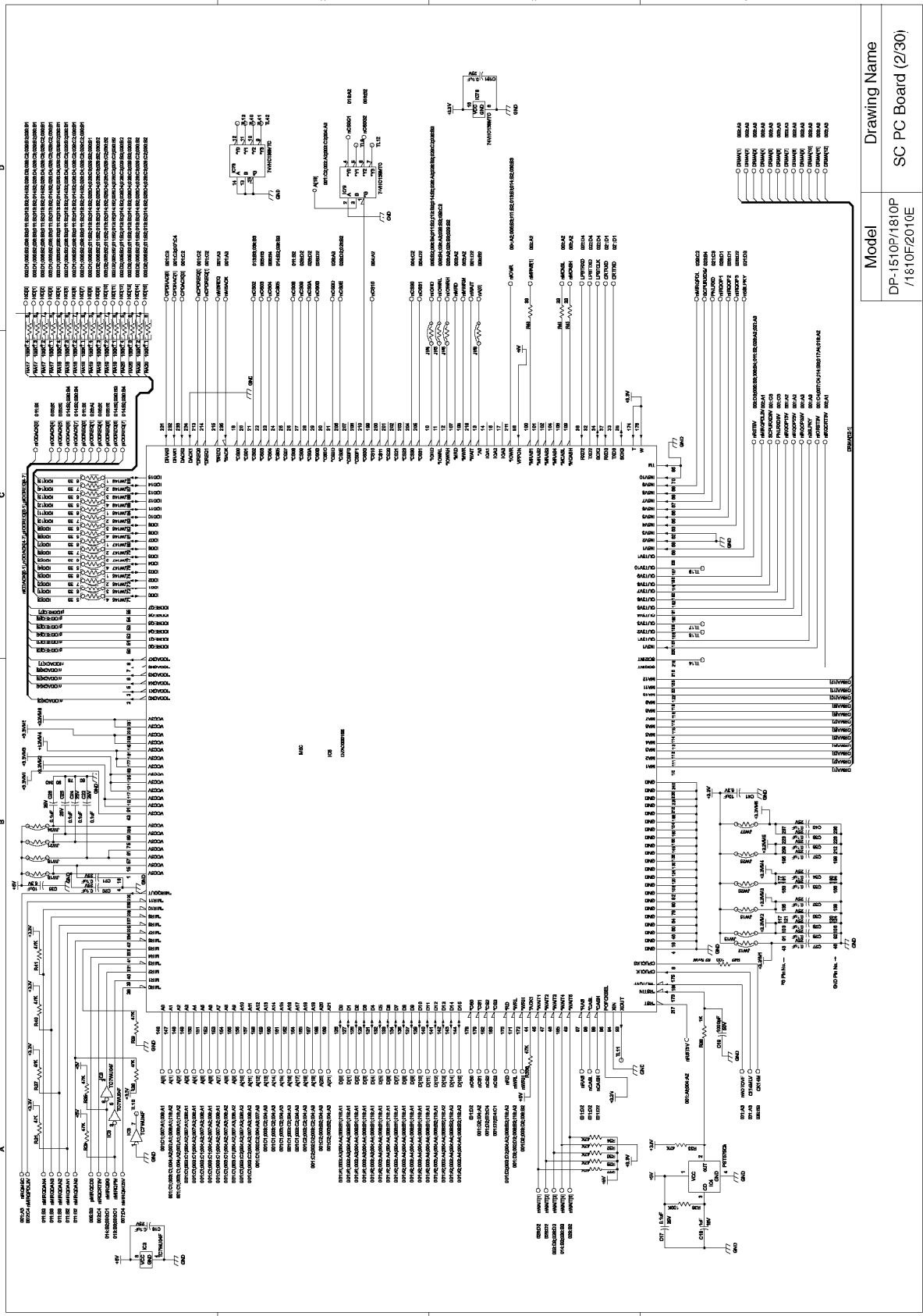
Model	Drawing Name
DP-1510P/1810P /1810F/2010E	General Circuit Diagram (4/5)

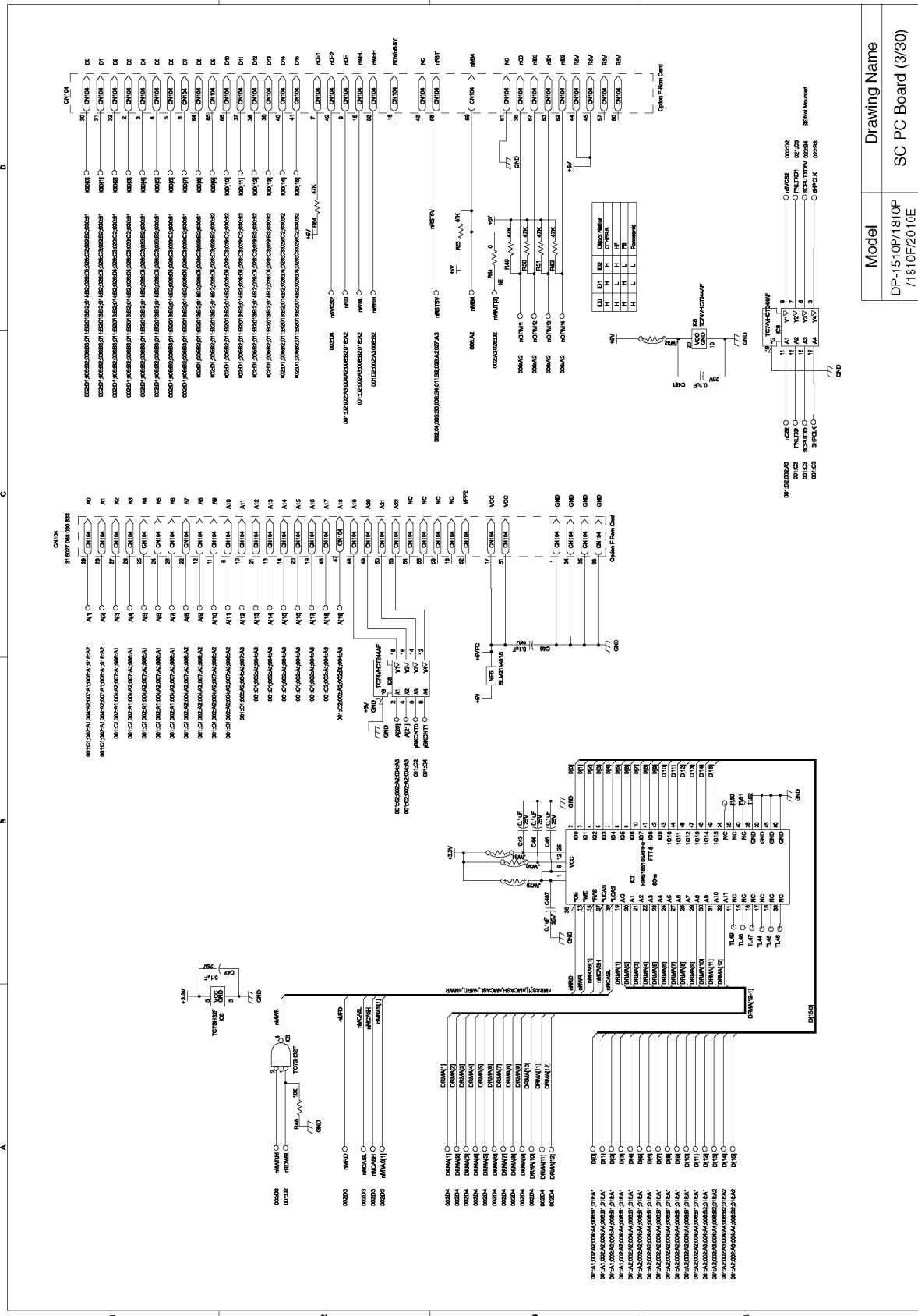




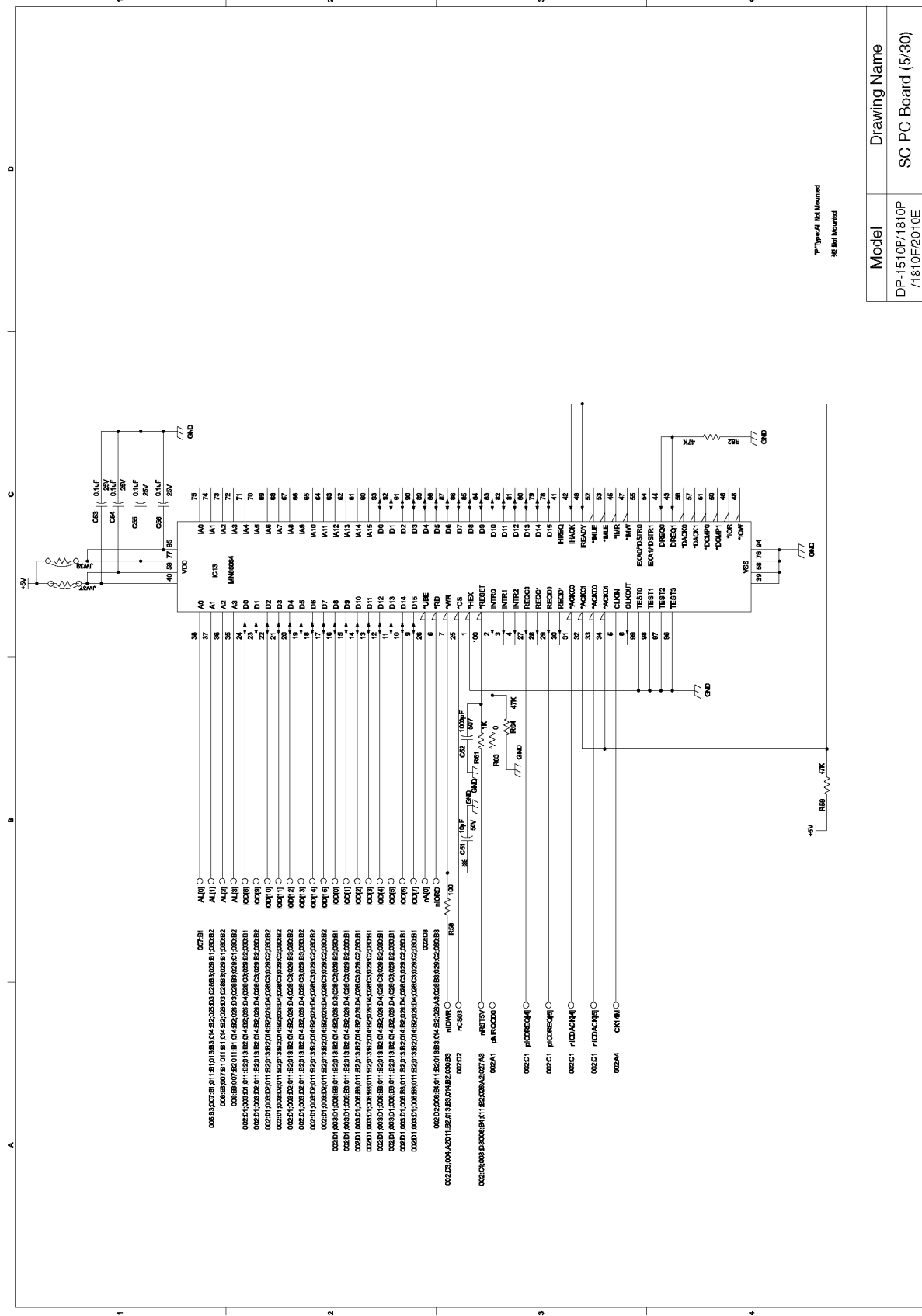
## 9.2. SC PC Board



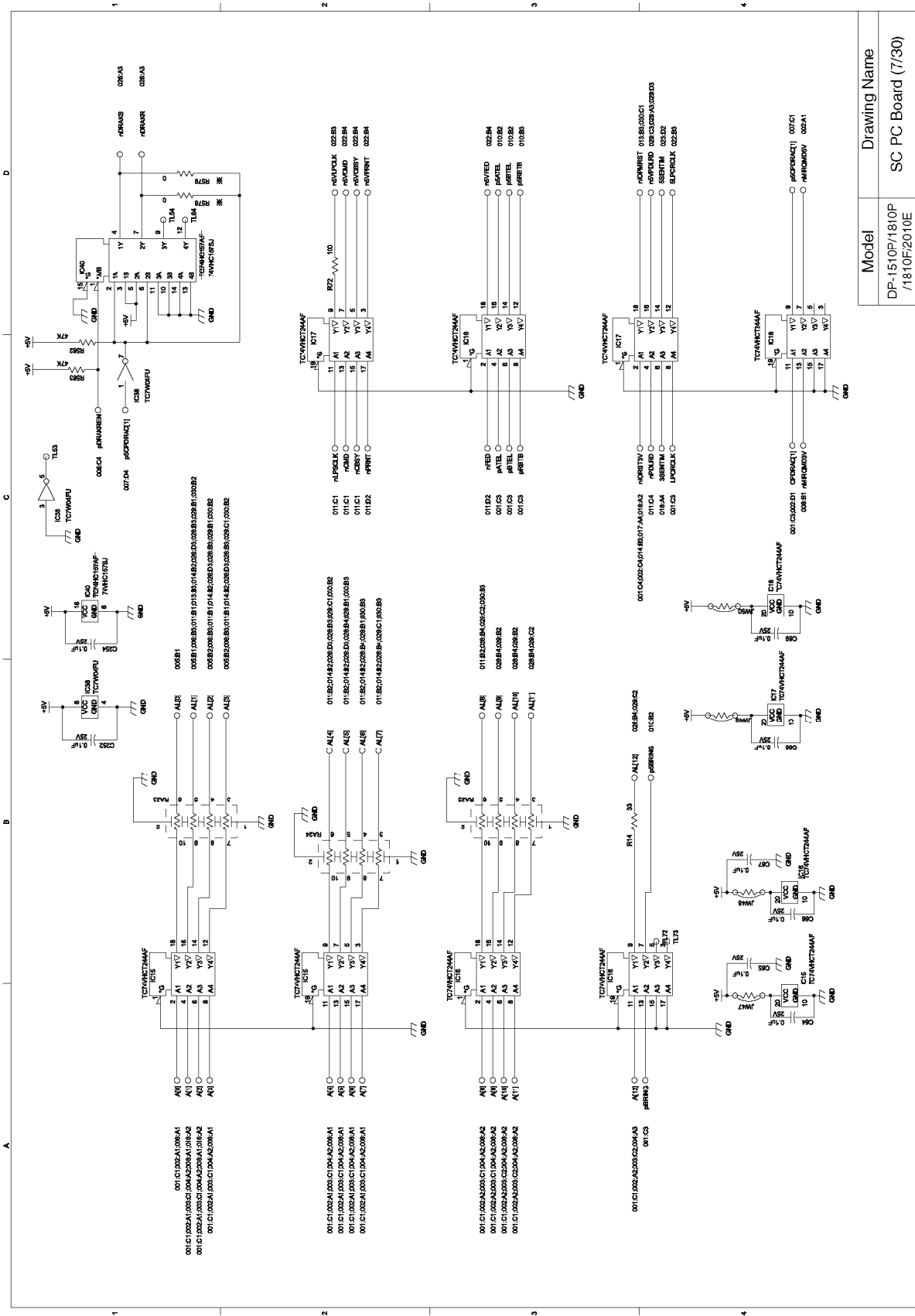


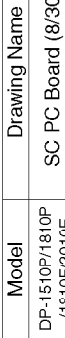




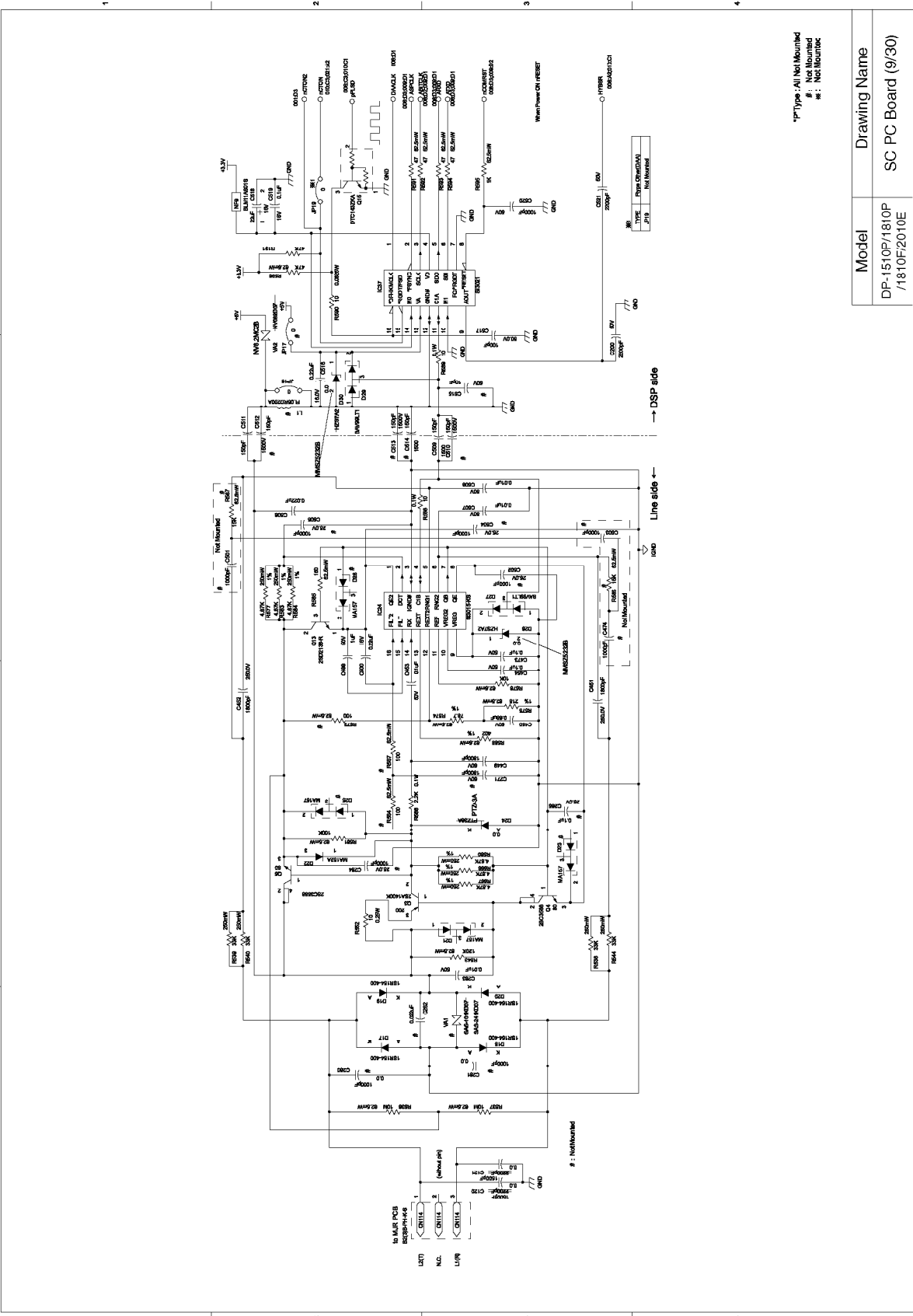




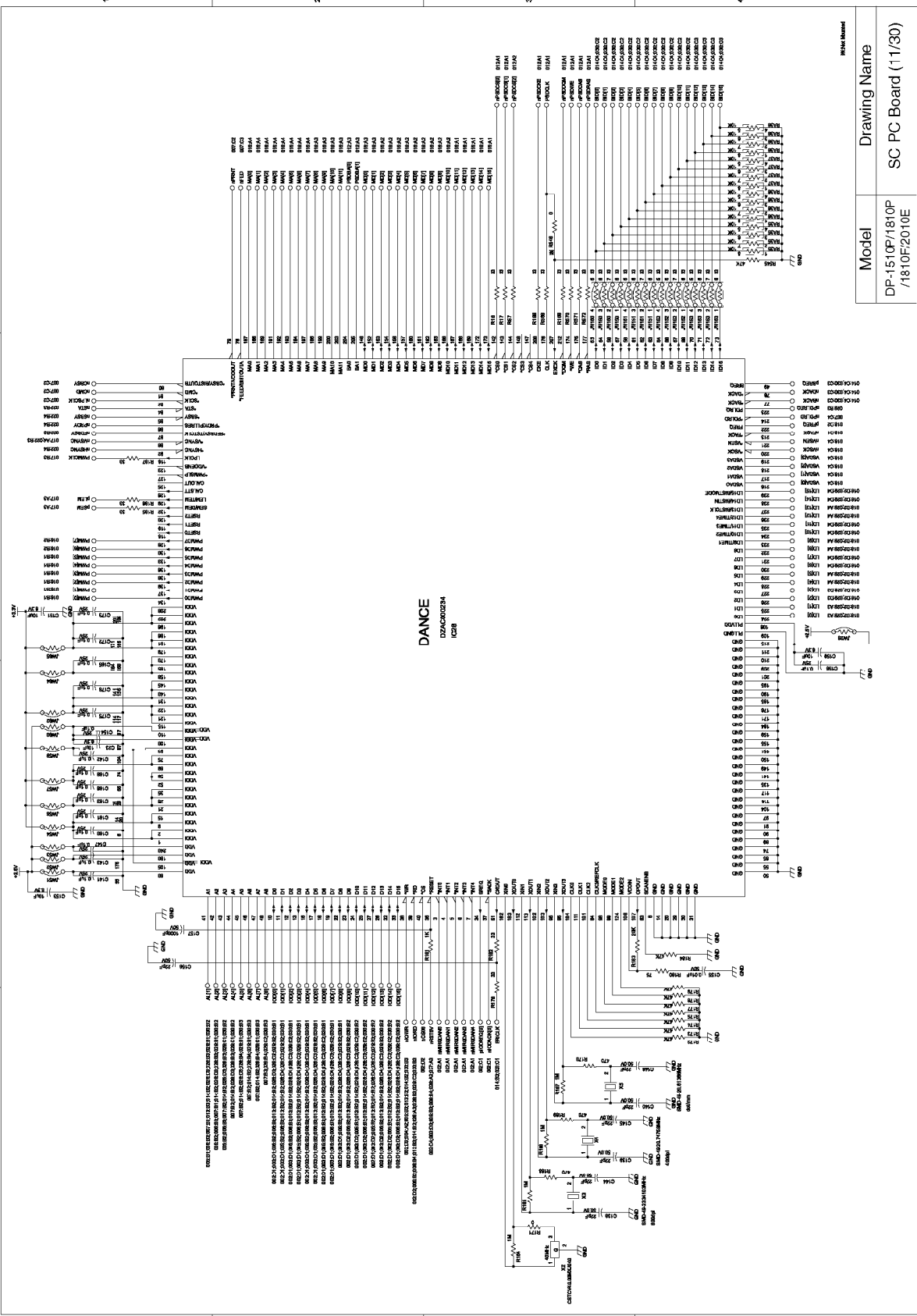


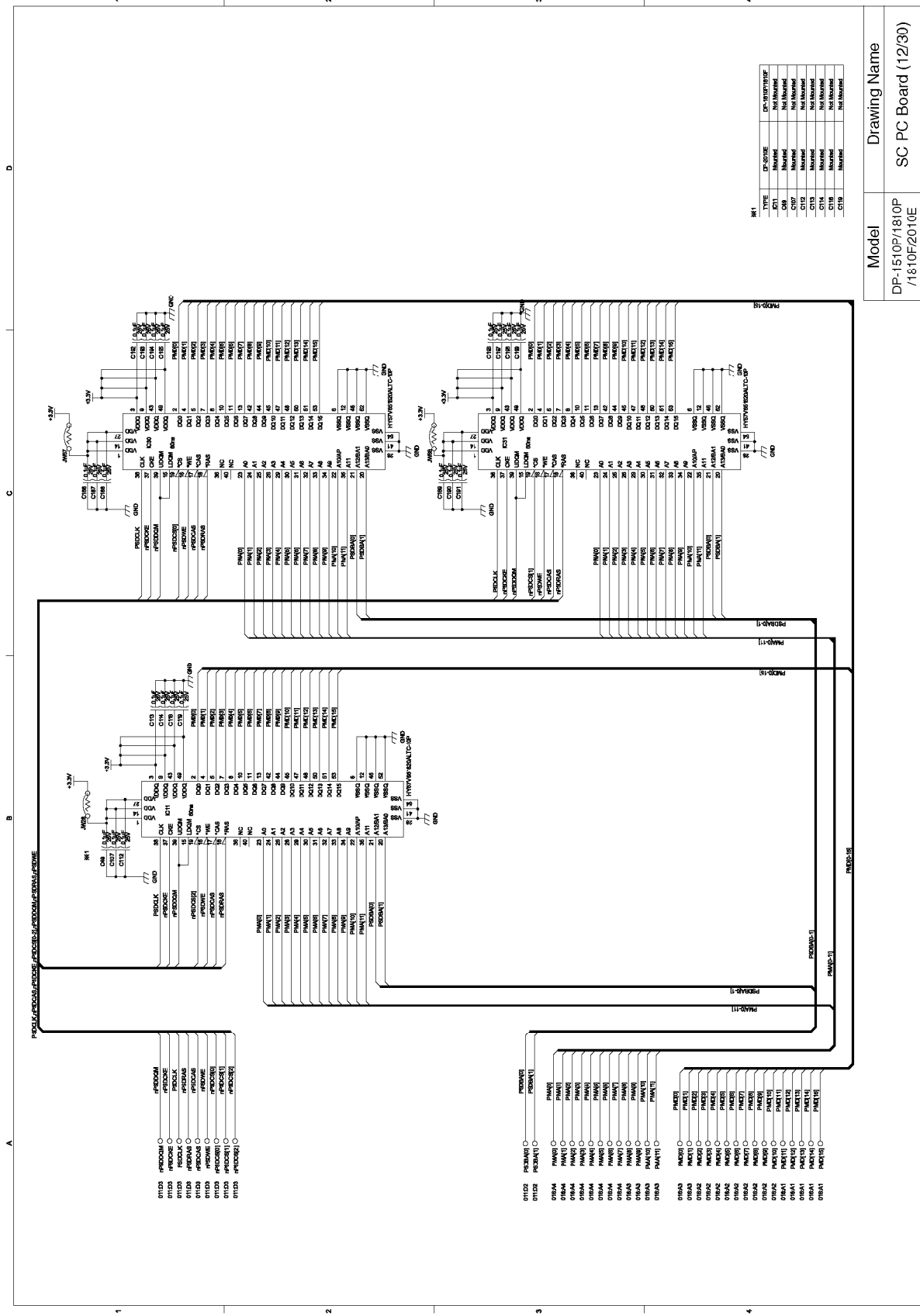


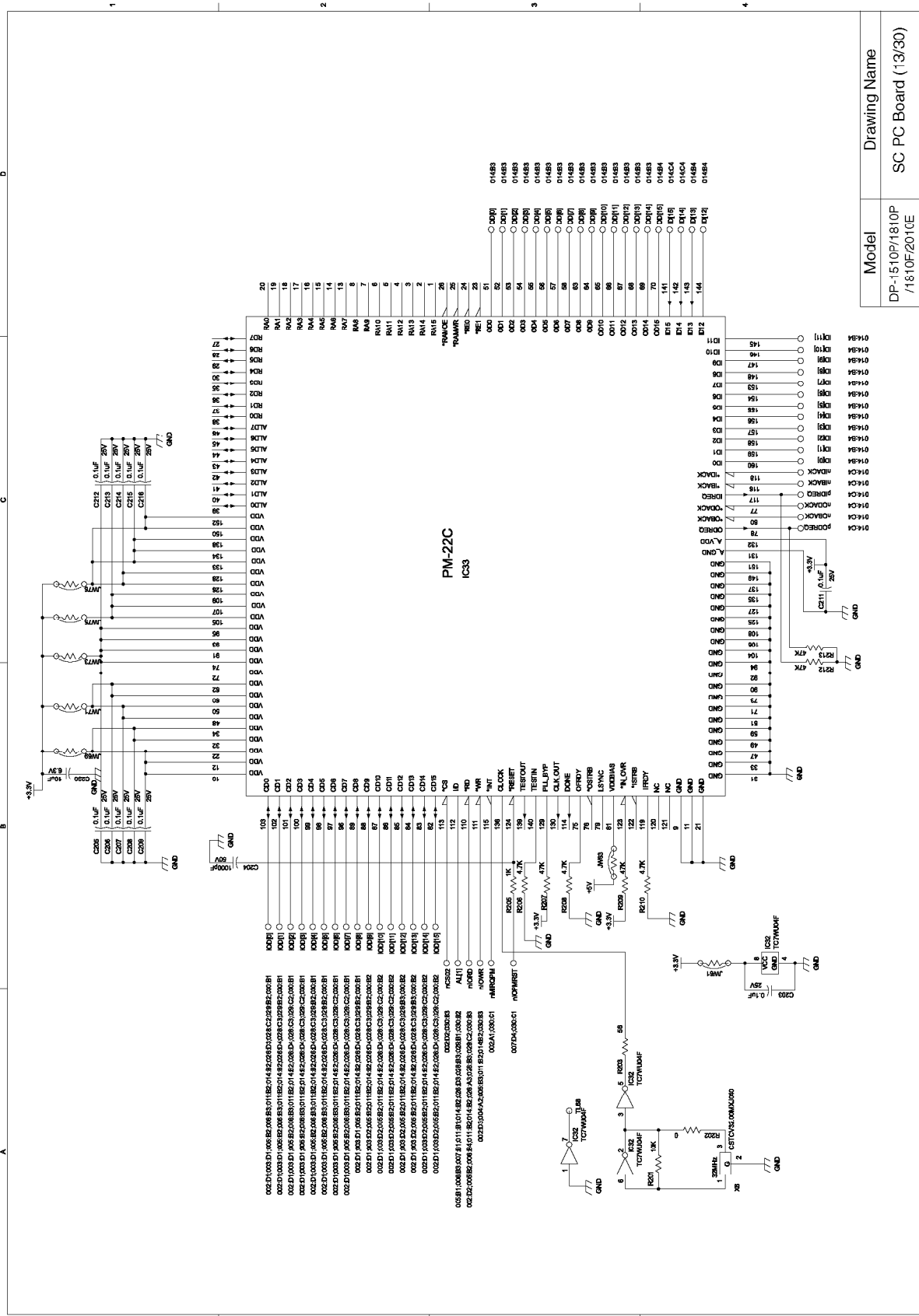




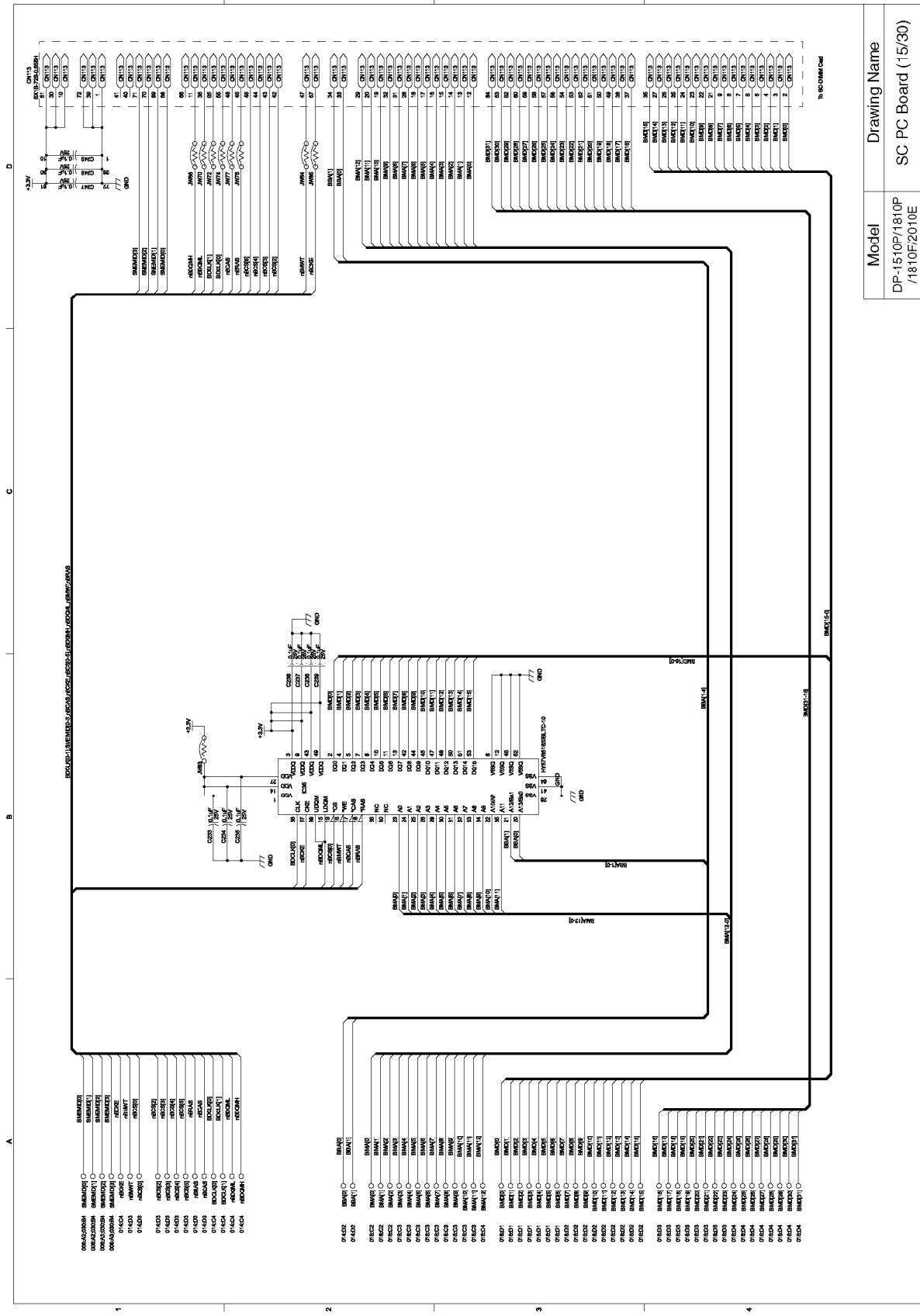


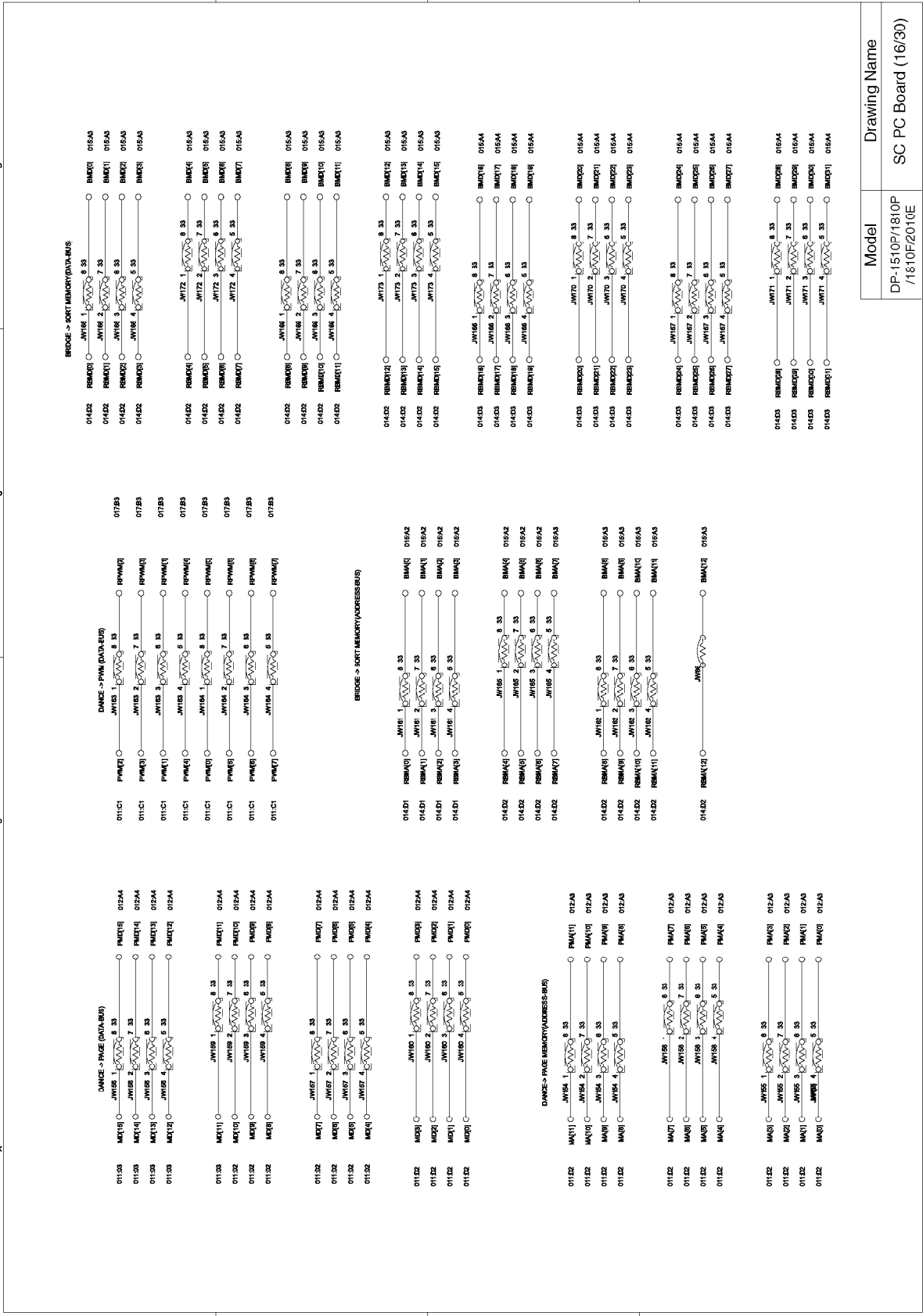




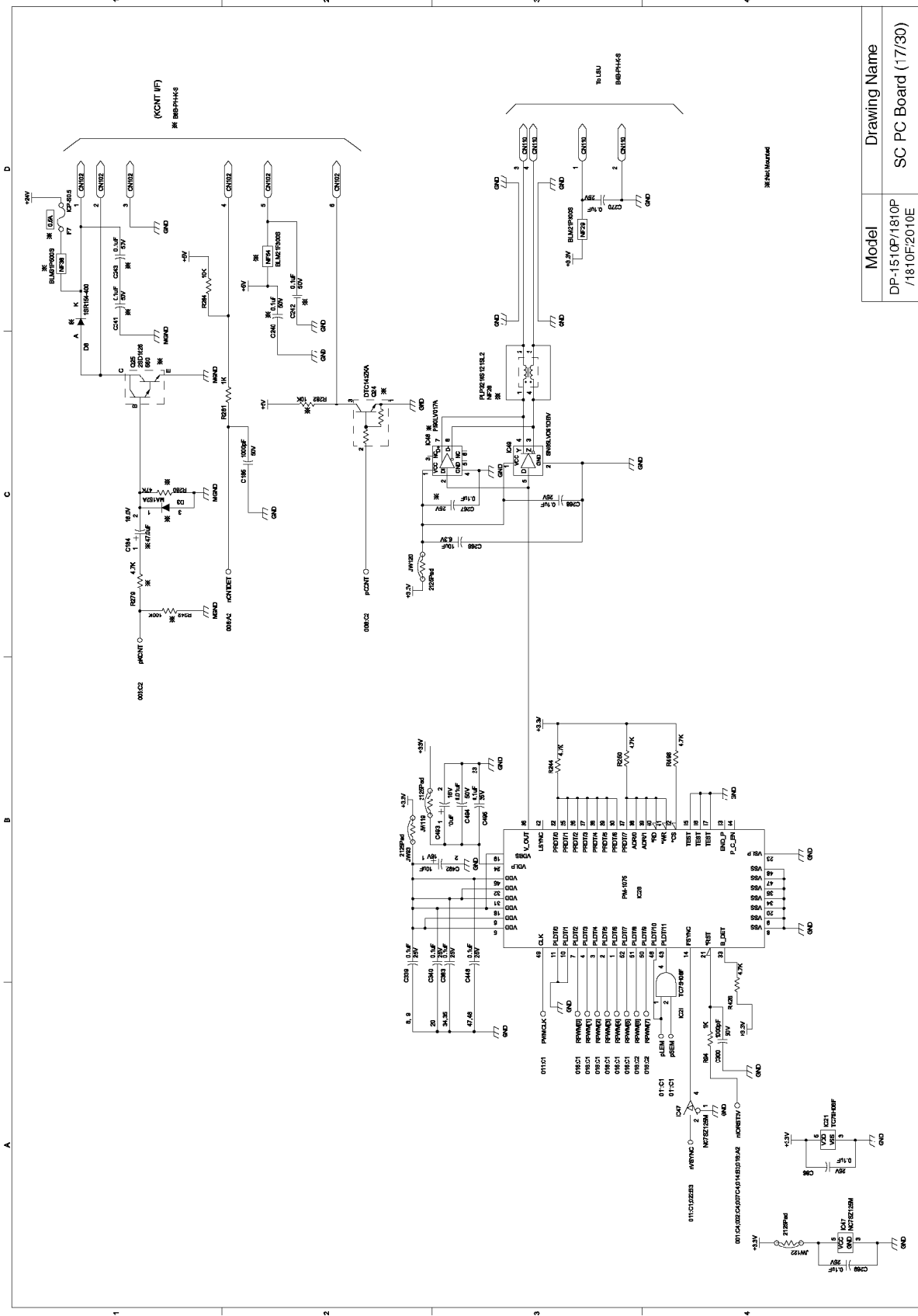




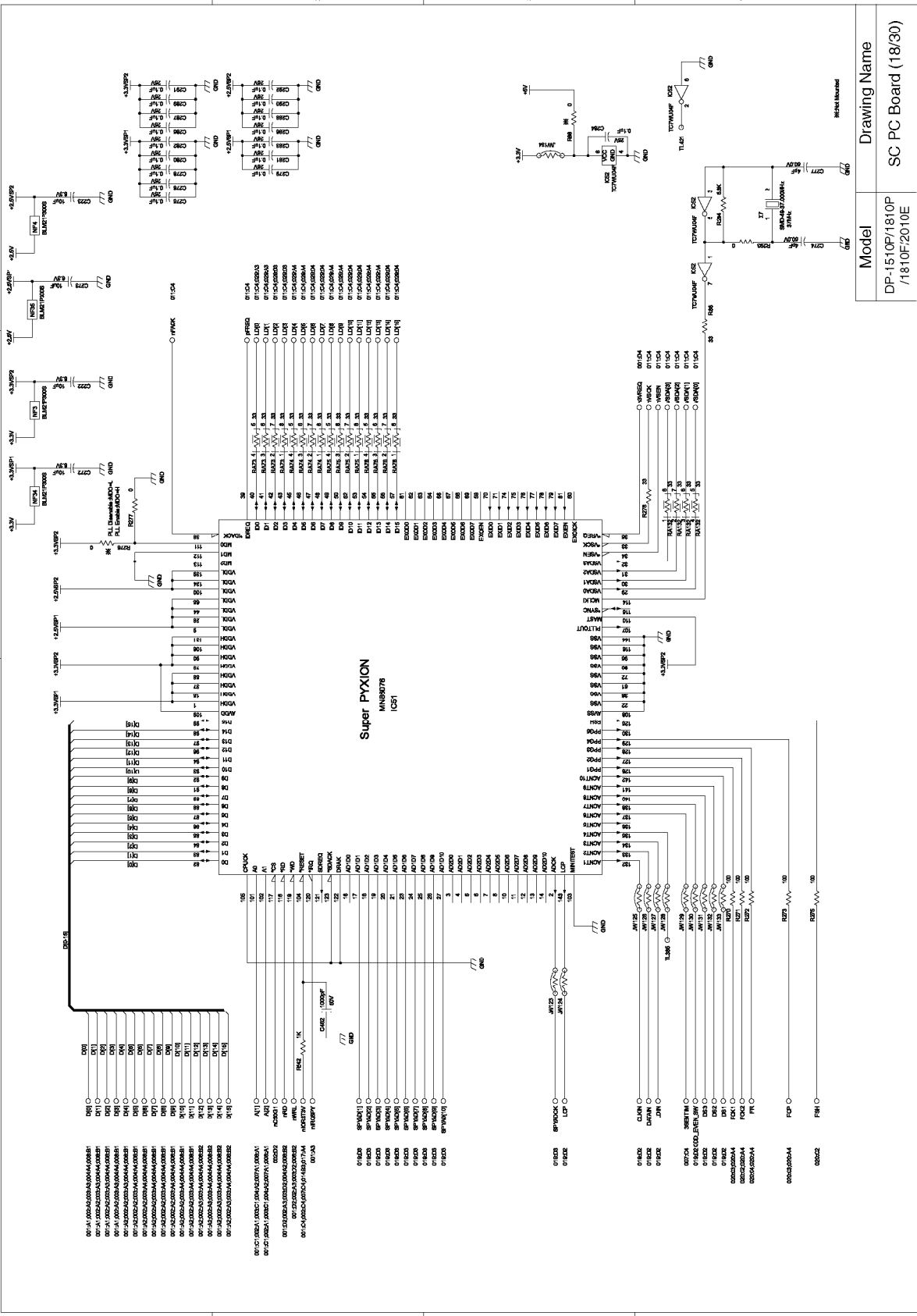


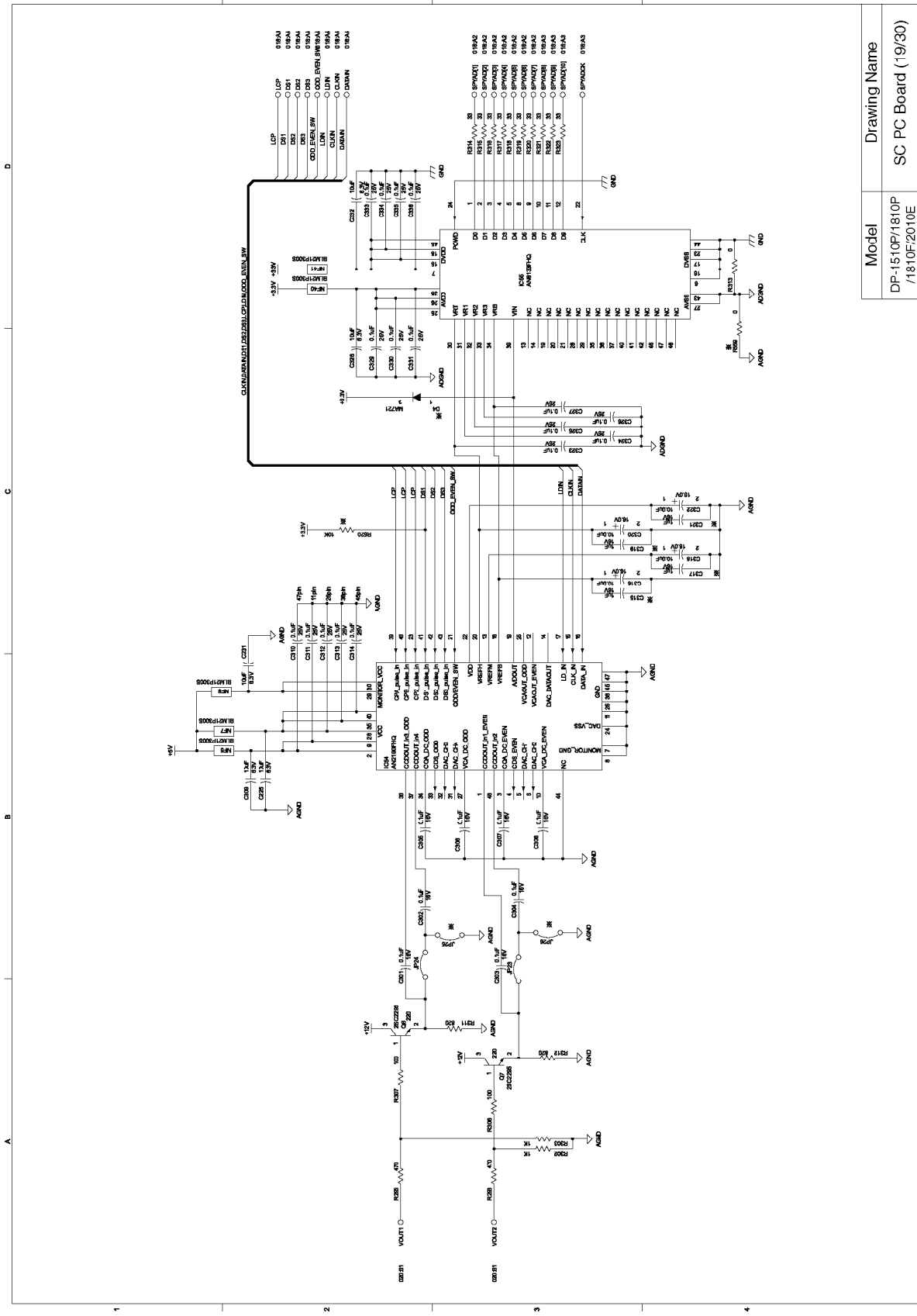


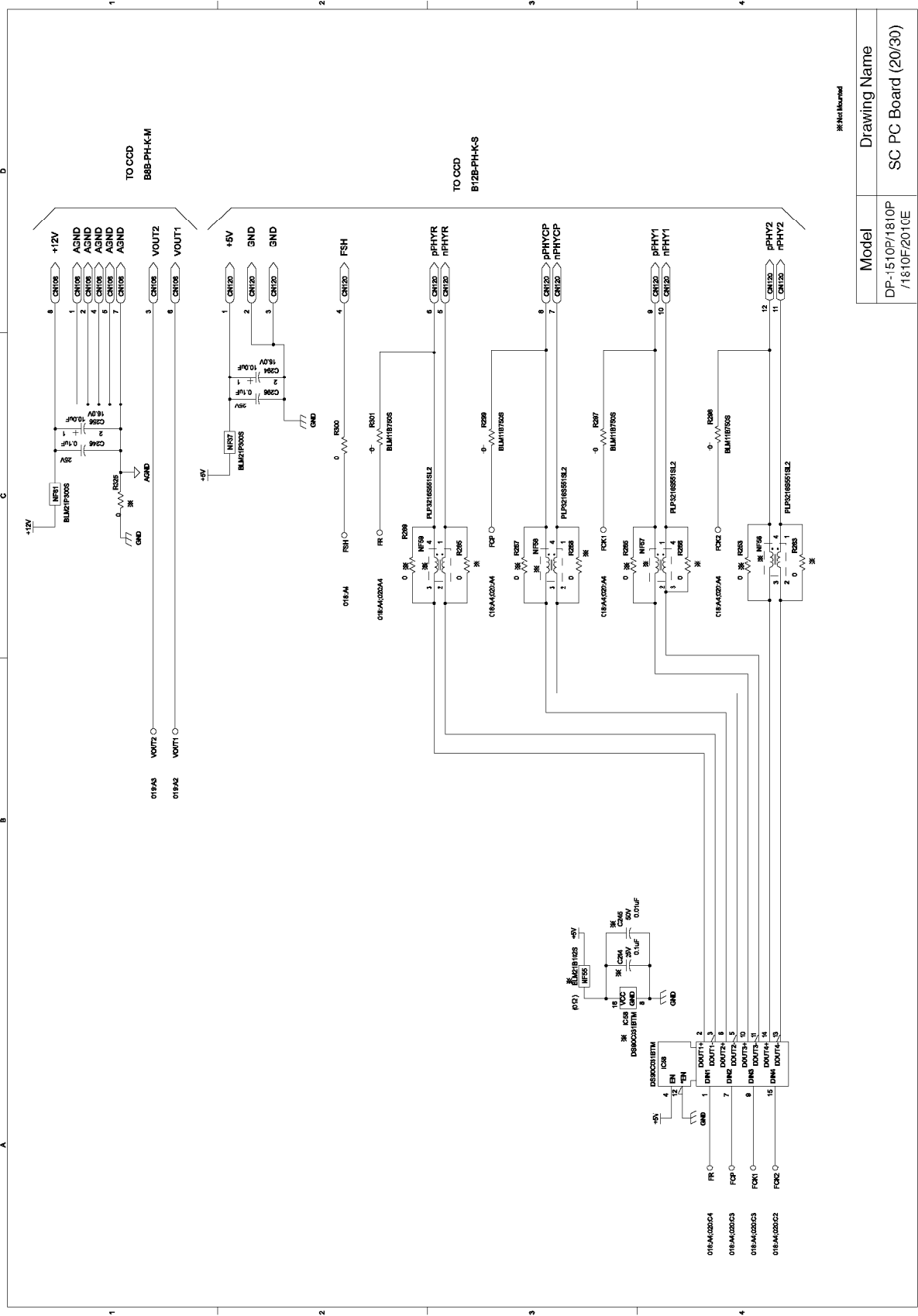


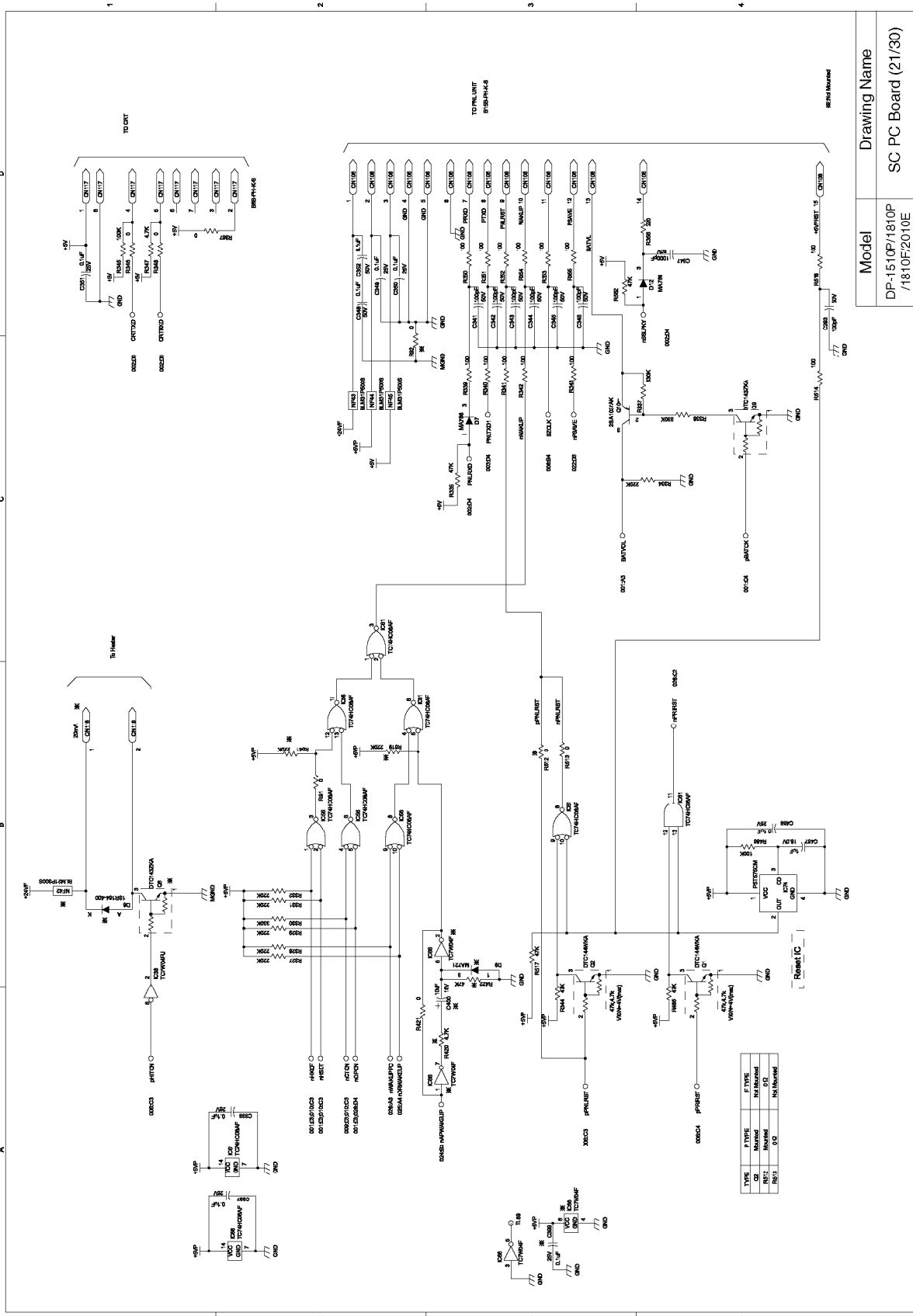


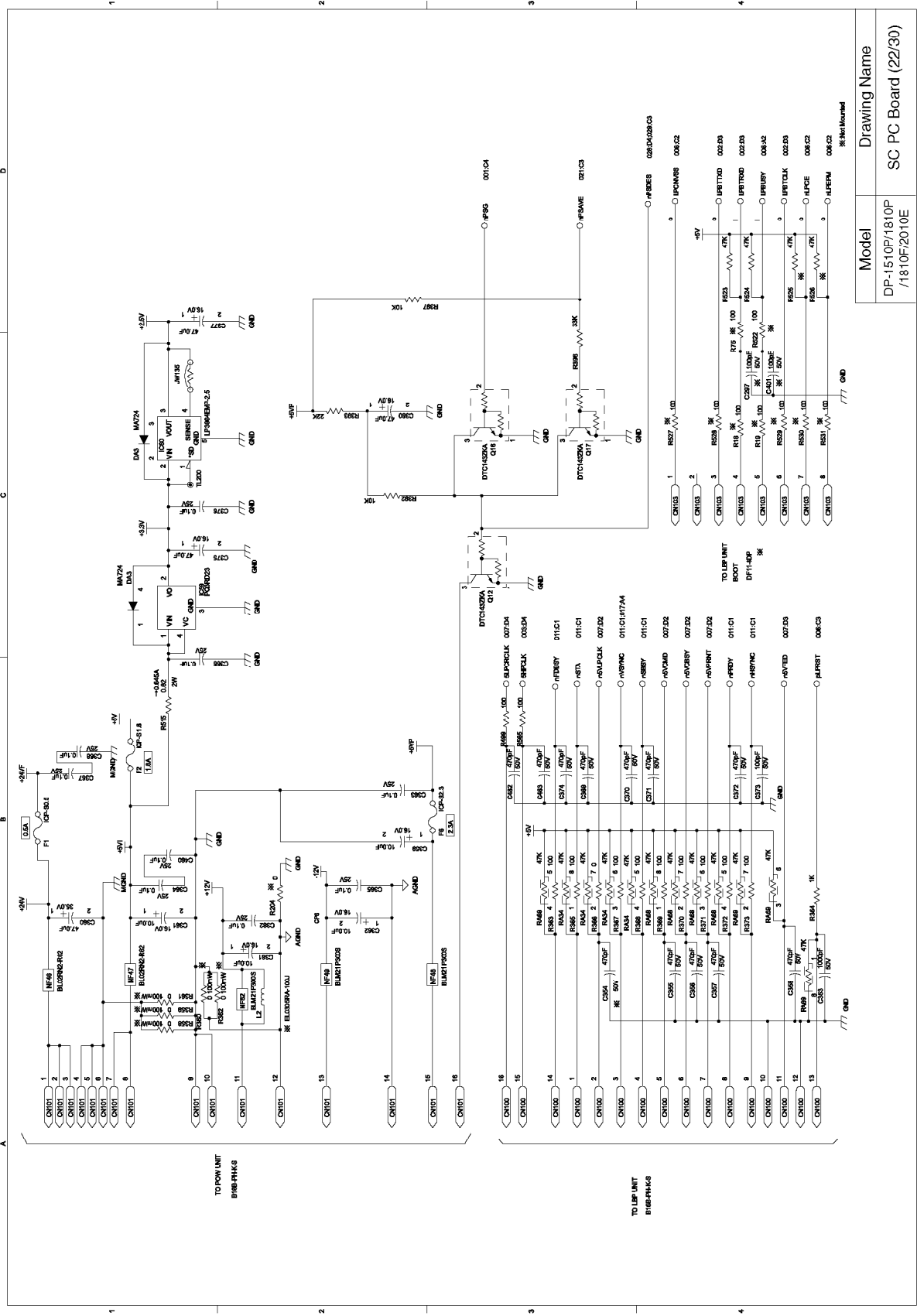
Model	Drawing Name
DP-1510P/1810P /1810F/2010E	SC PC Board (17/30)



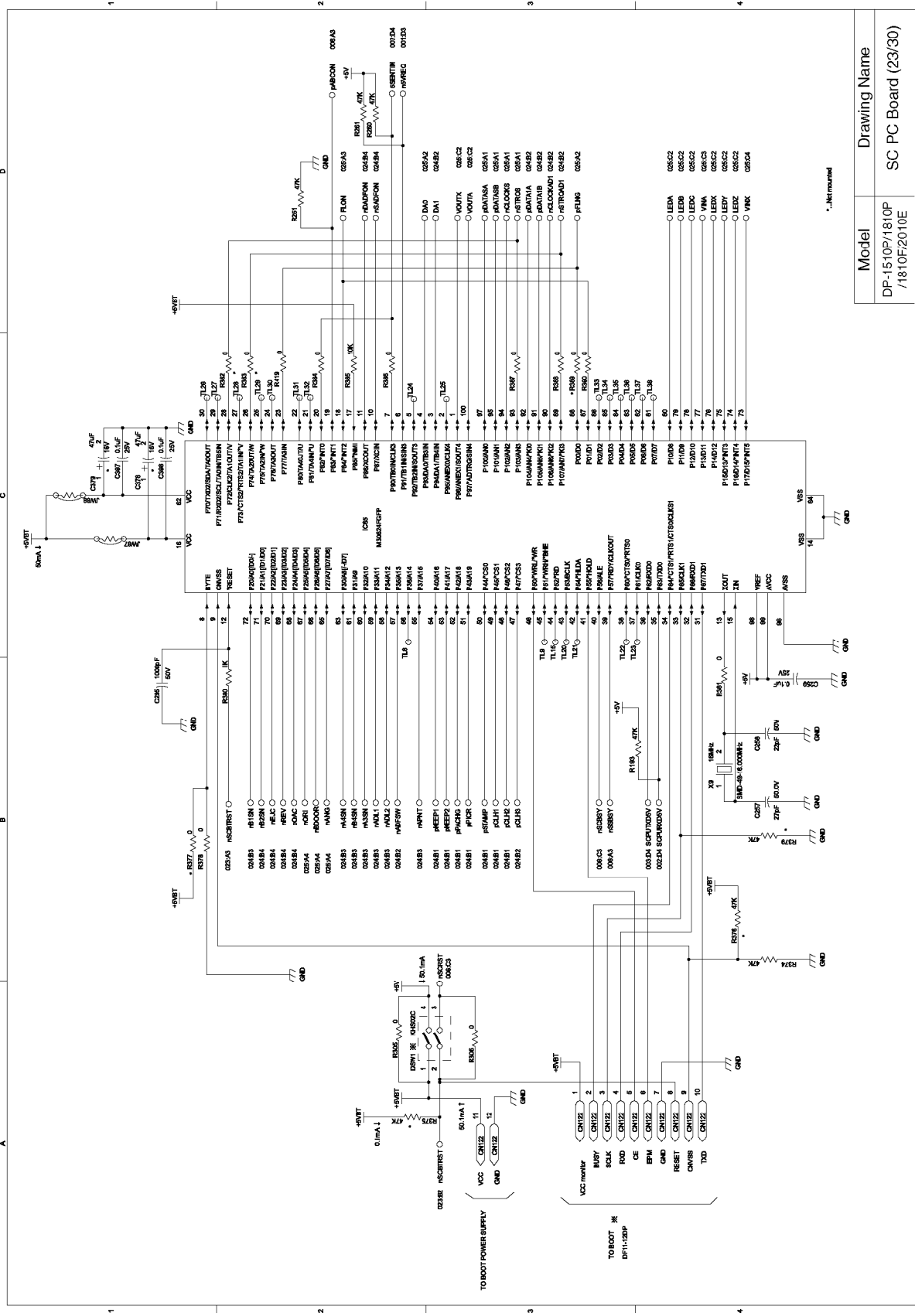






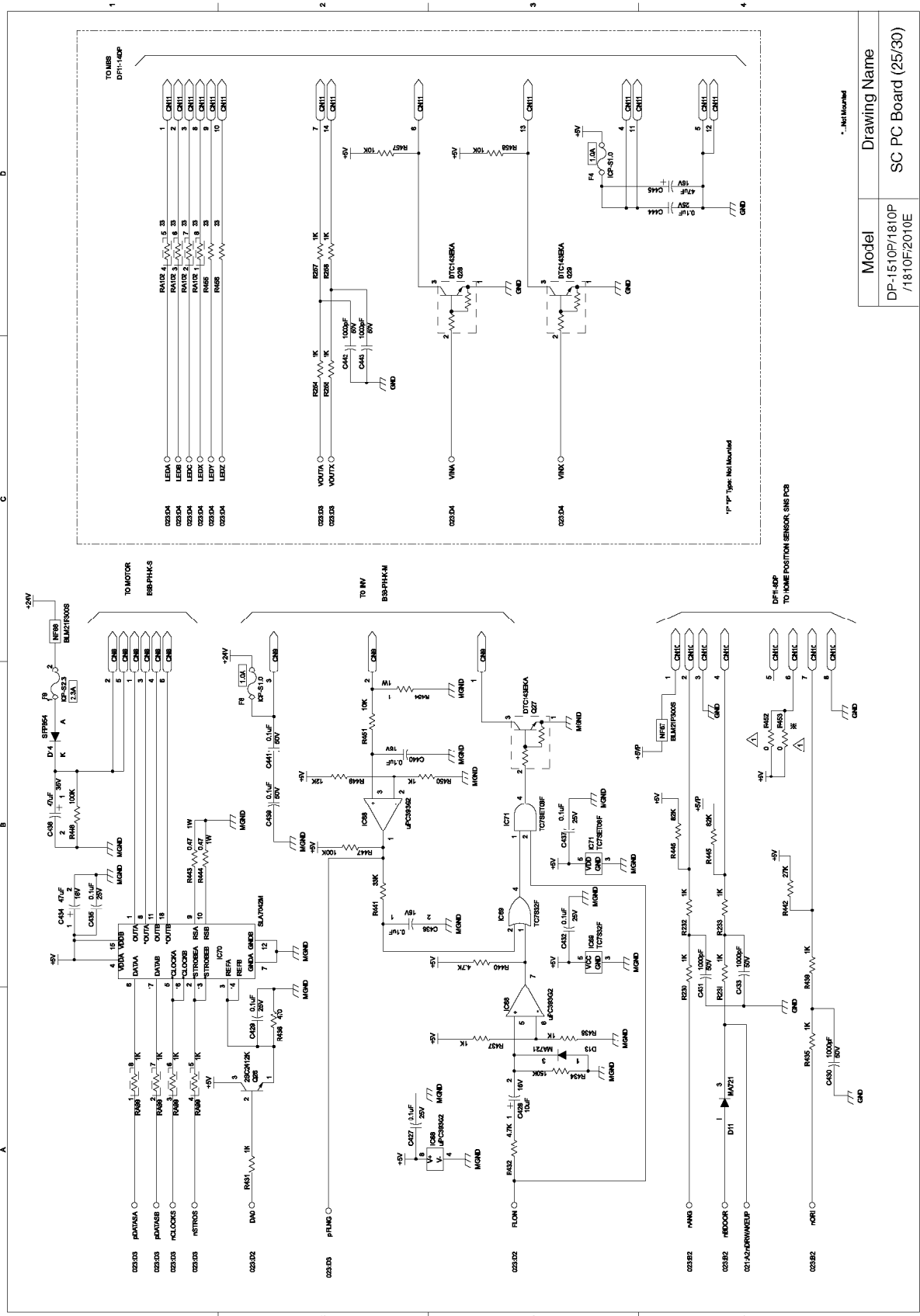


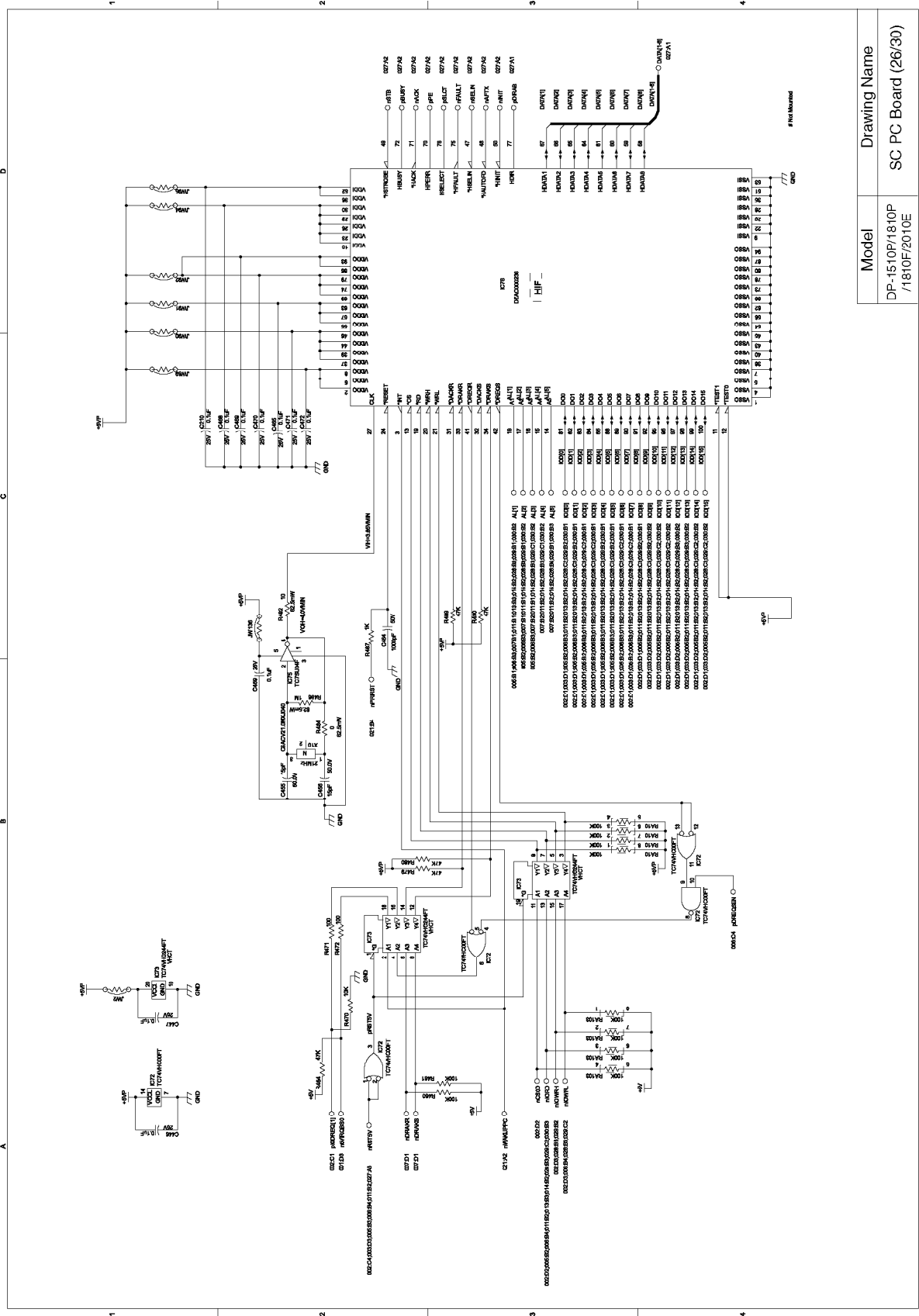
Model	Drawing Name
DP-1510P/1810P /1810F/2010E	SC PC Board (22/30)

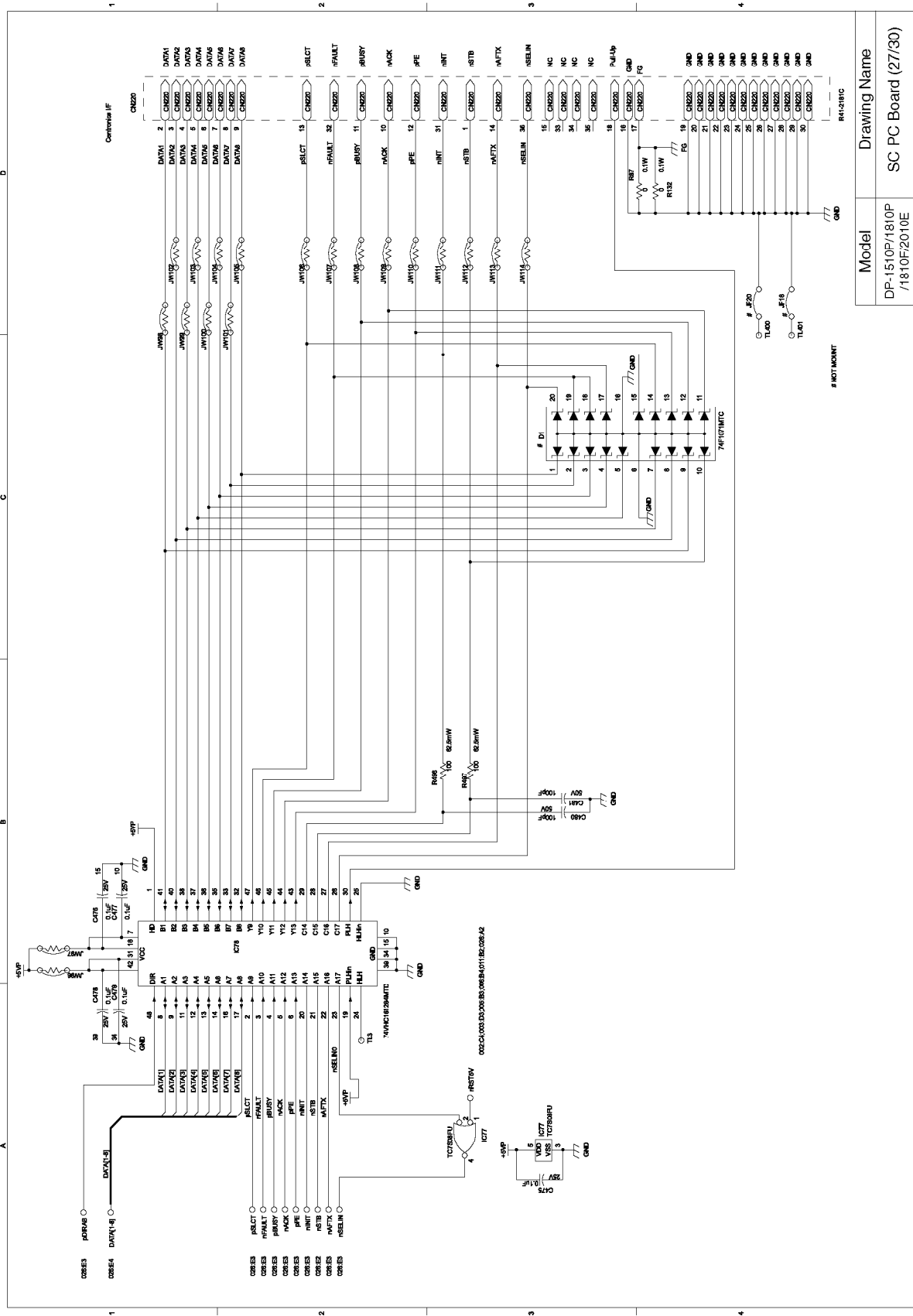


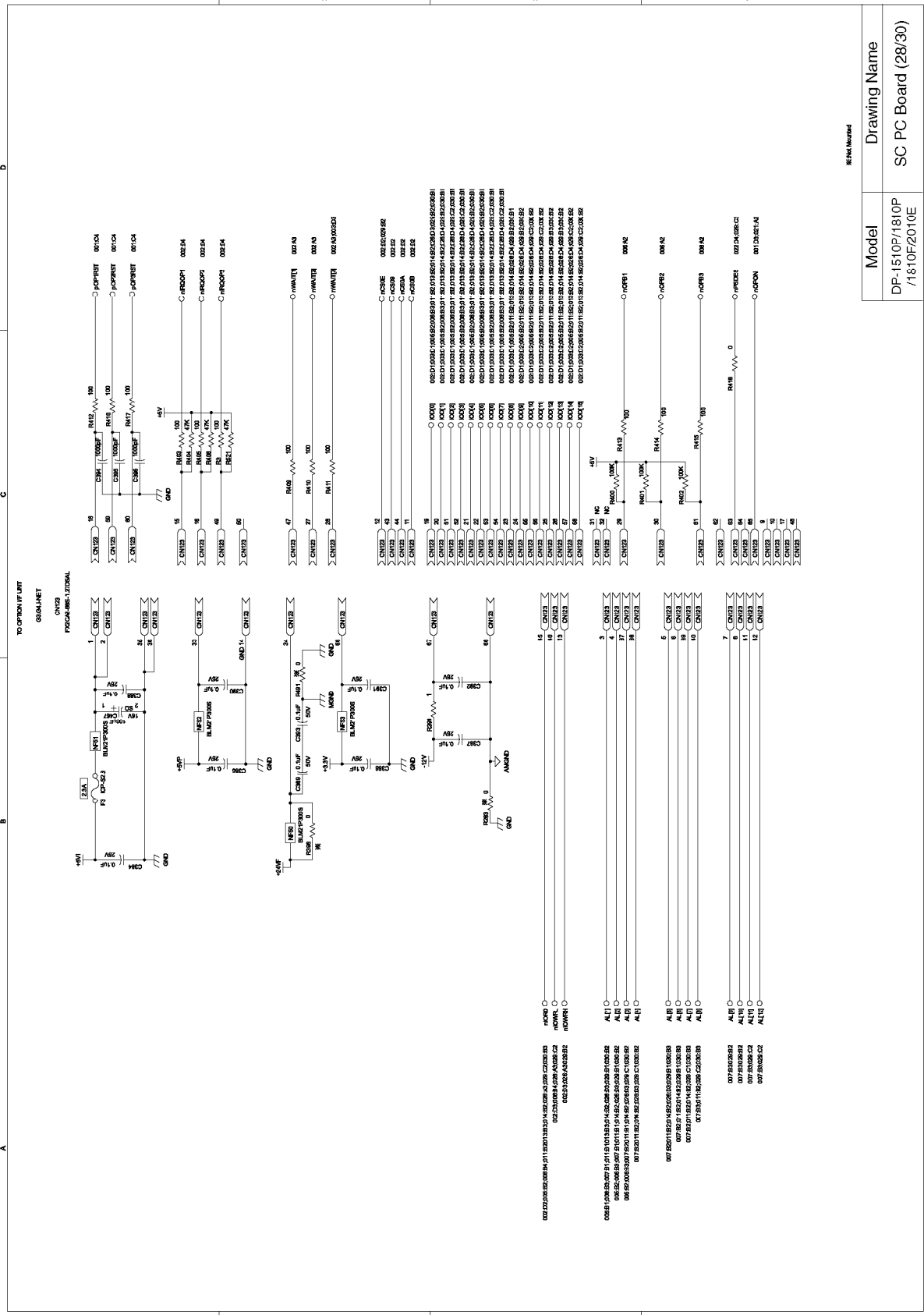


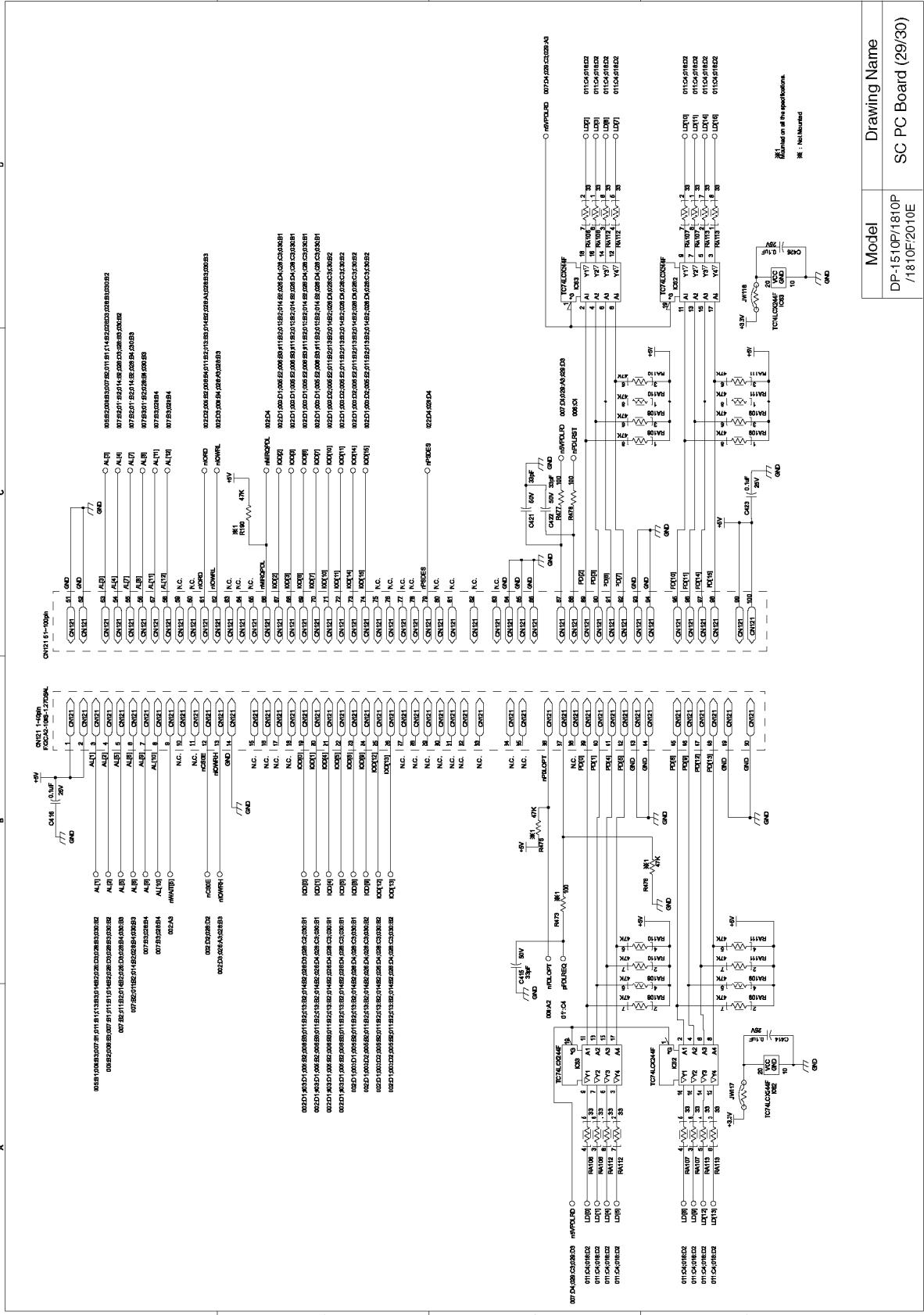






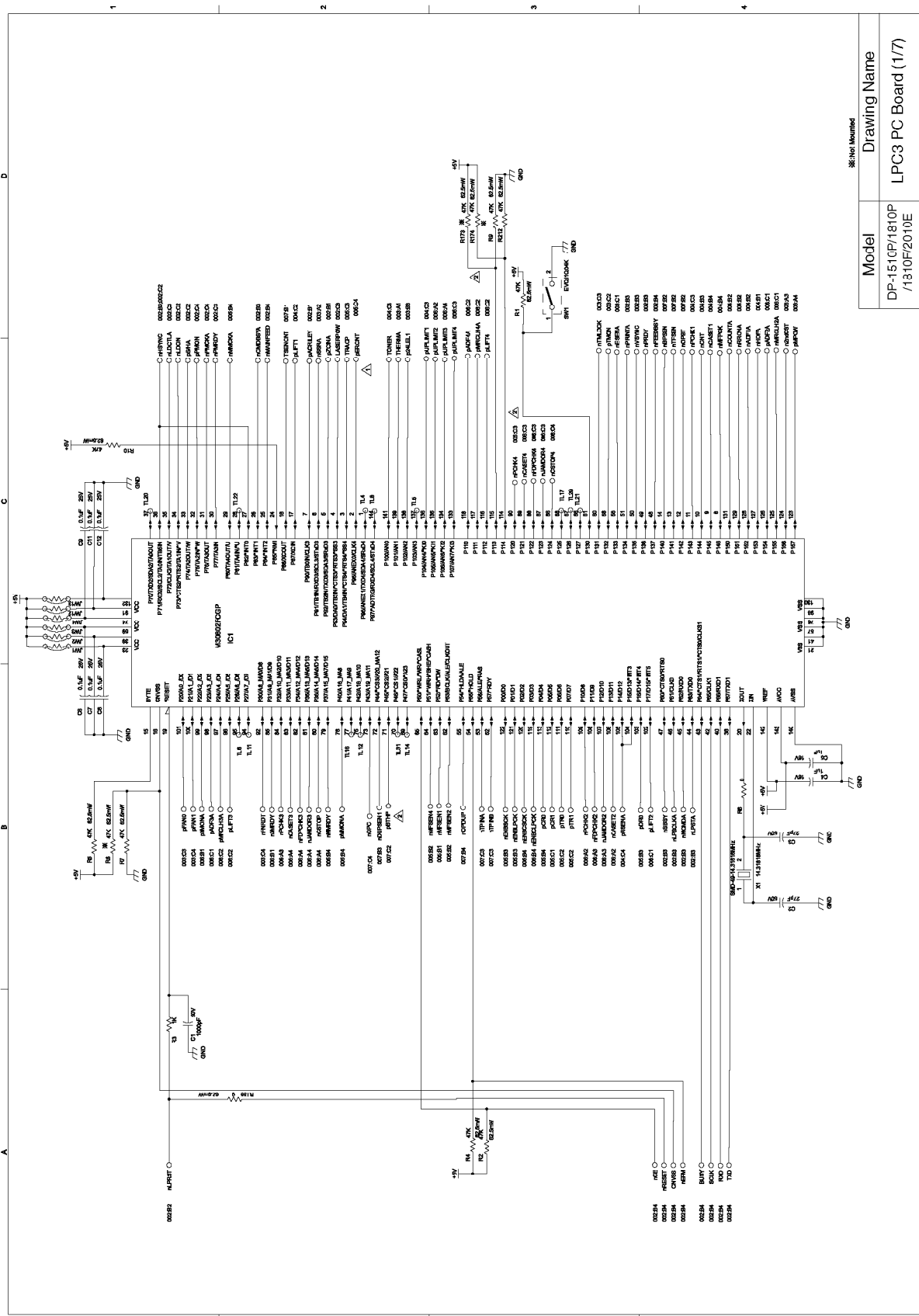






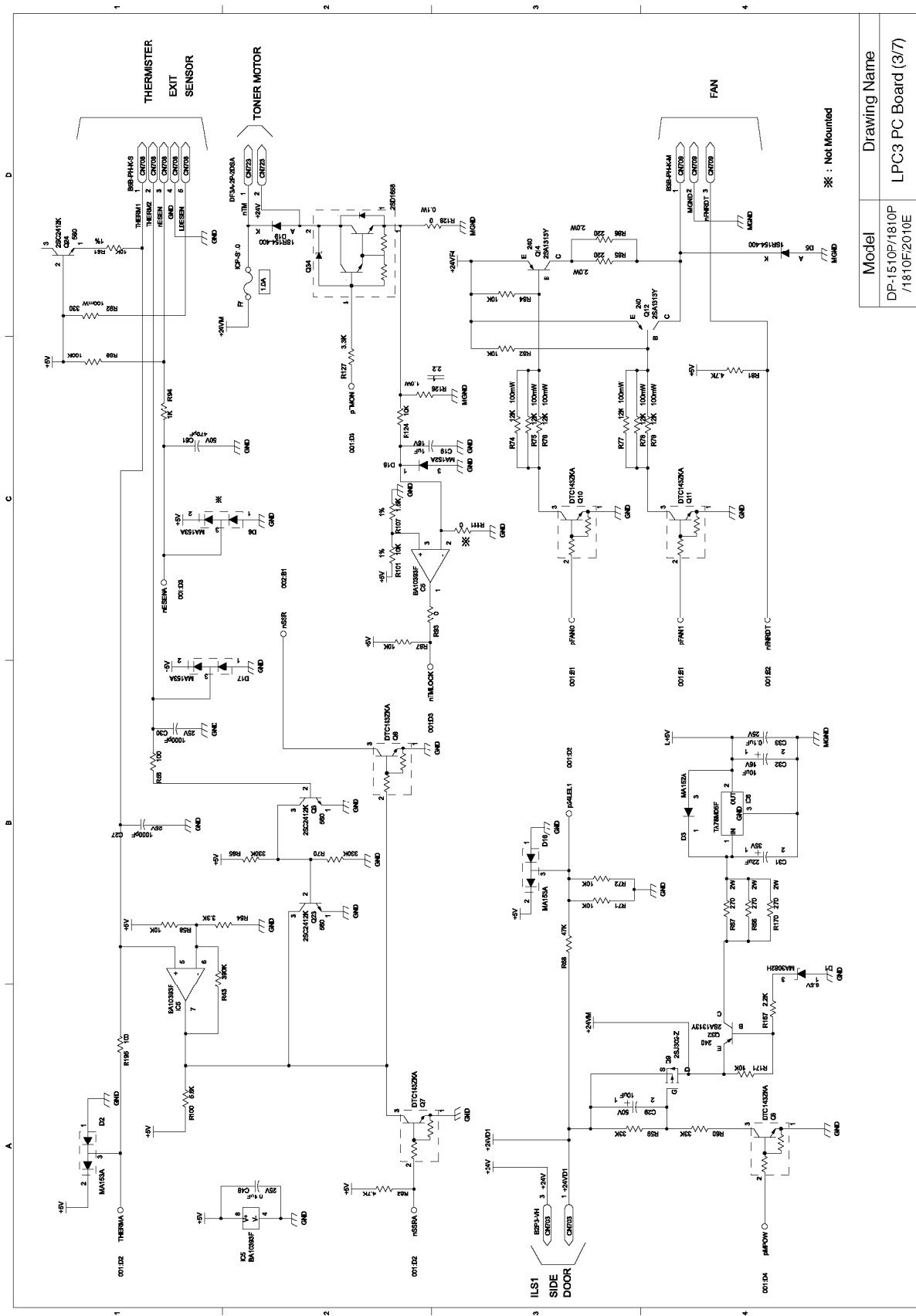


9.3. LPC3 PC Board

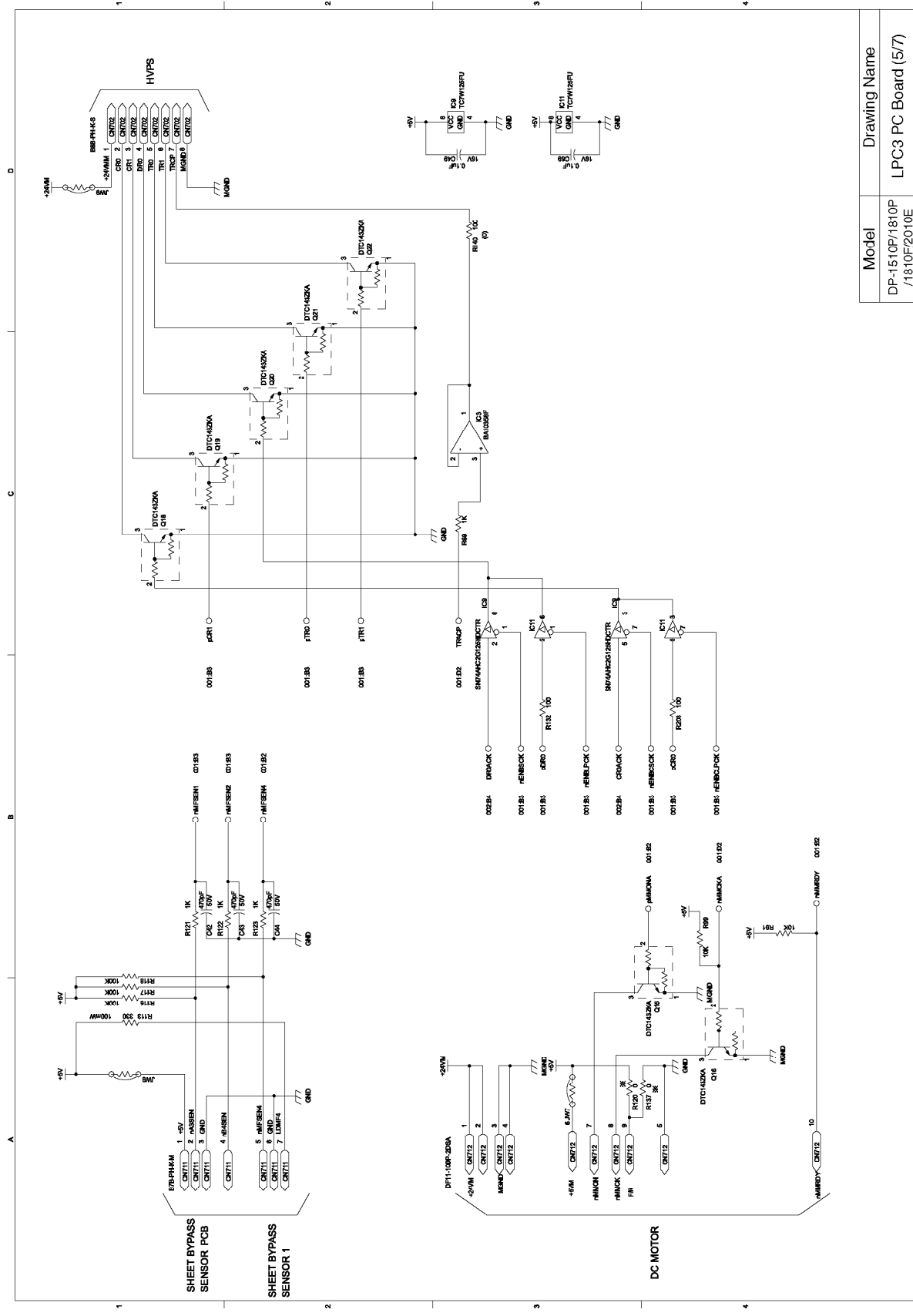




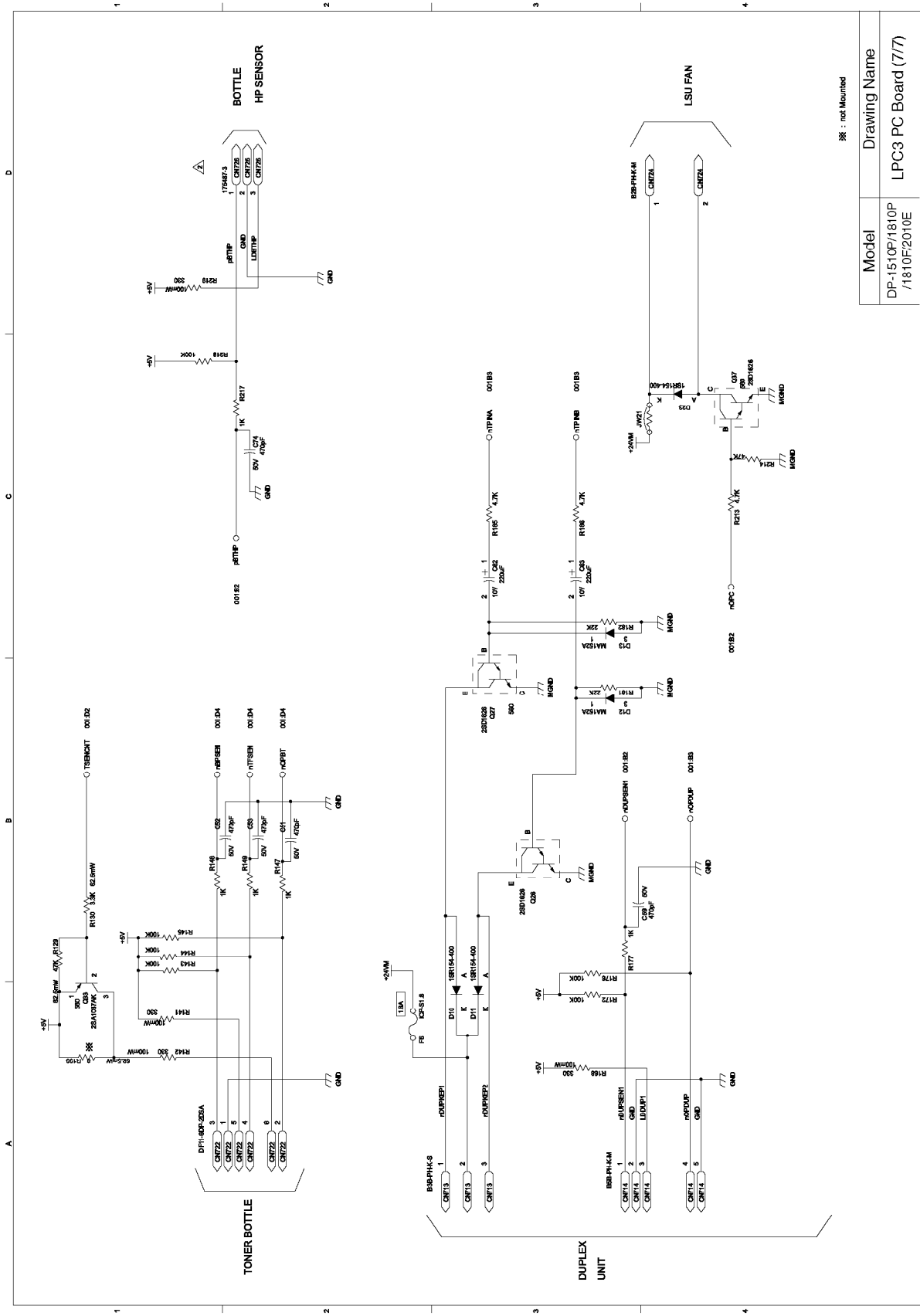








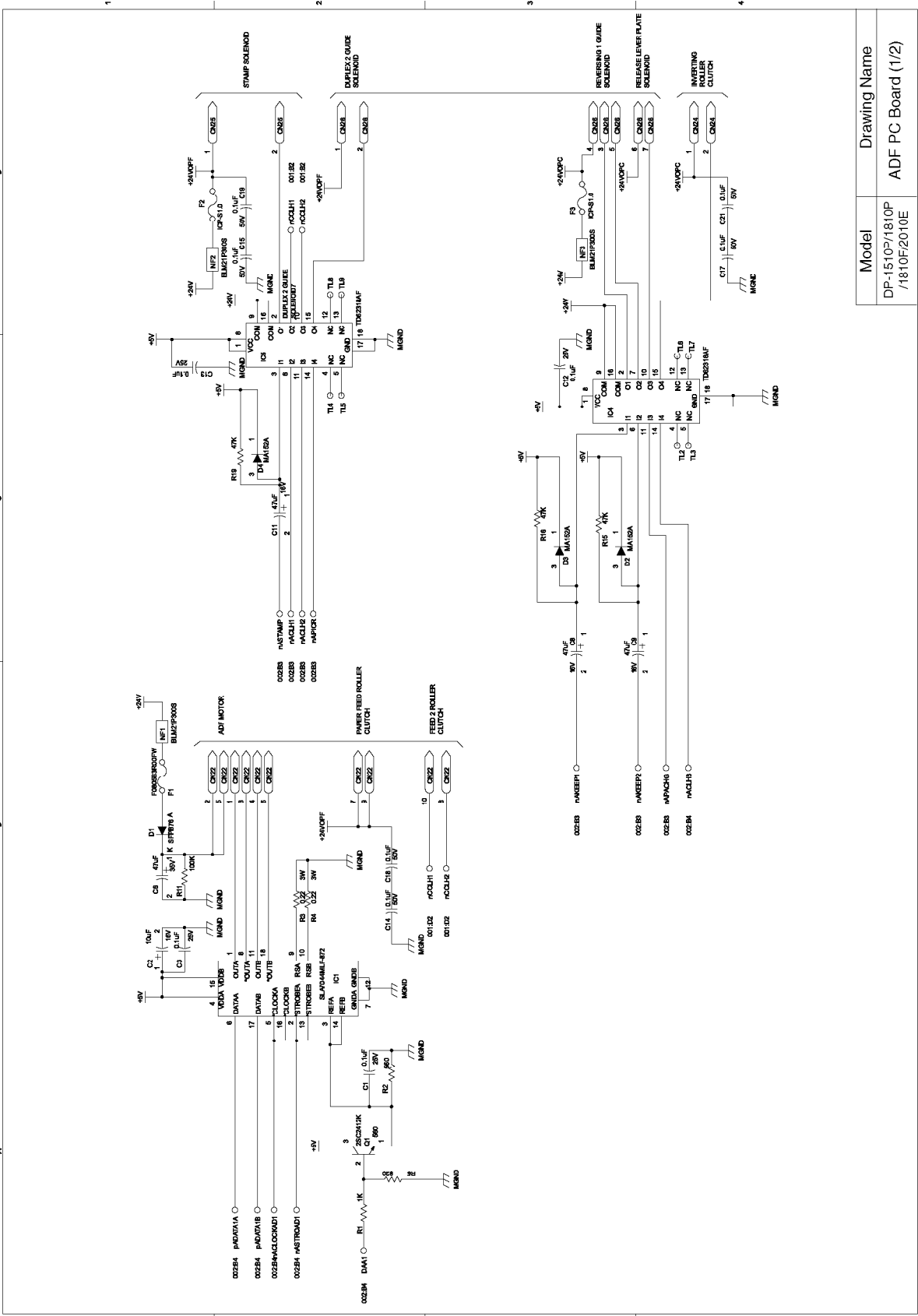




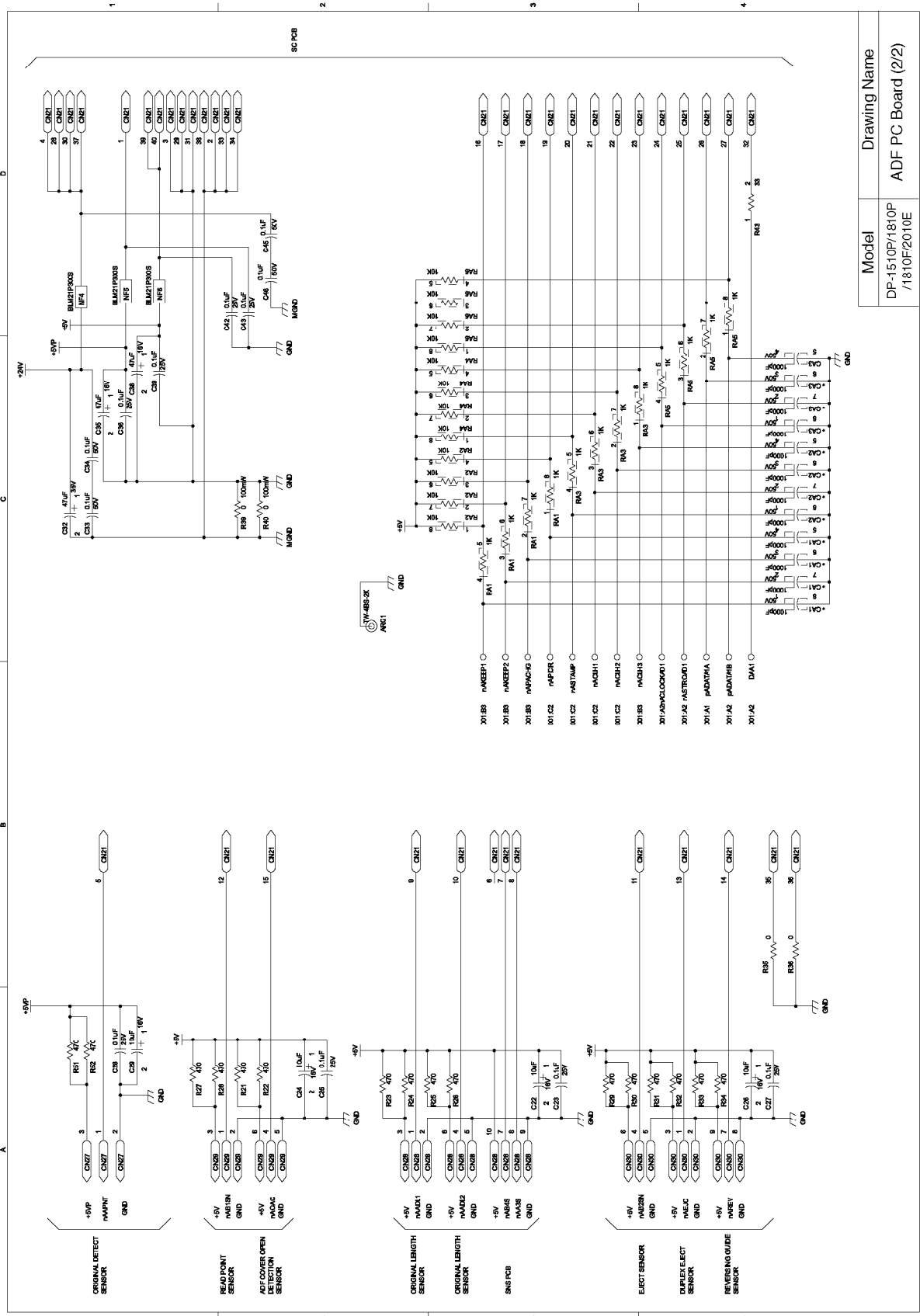
※ : not Mounted

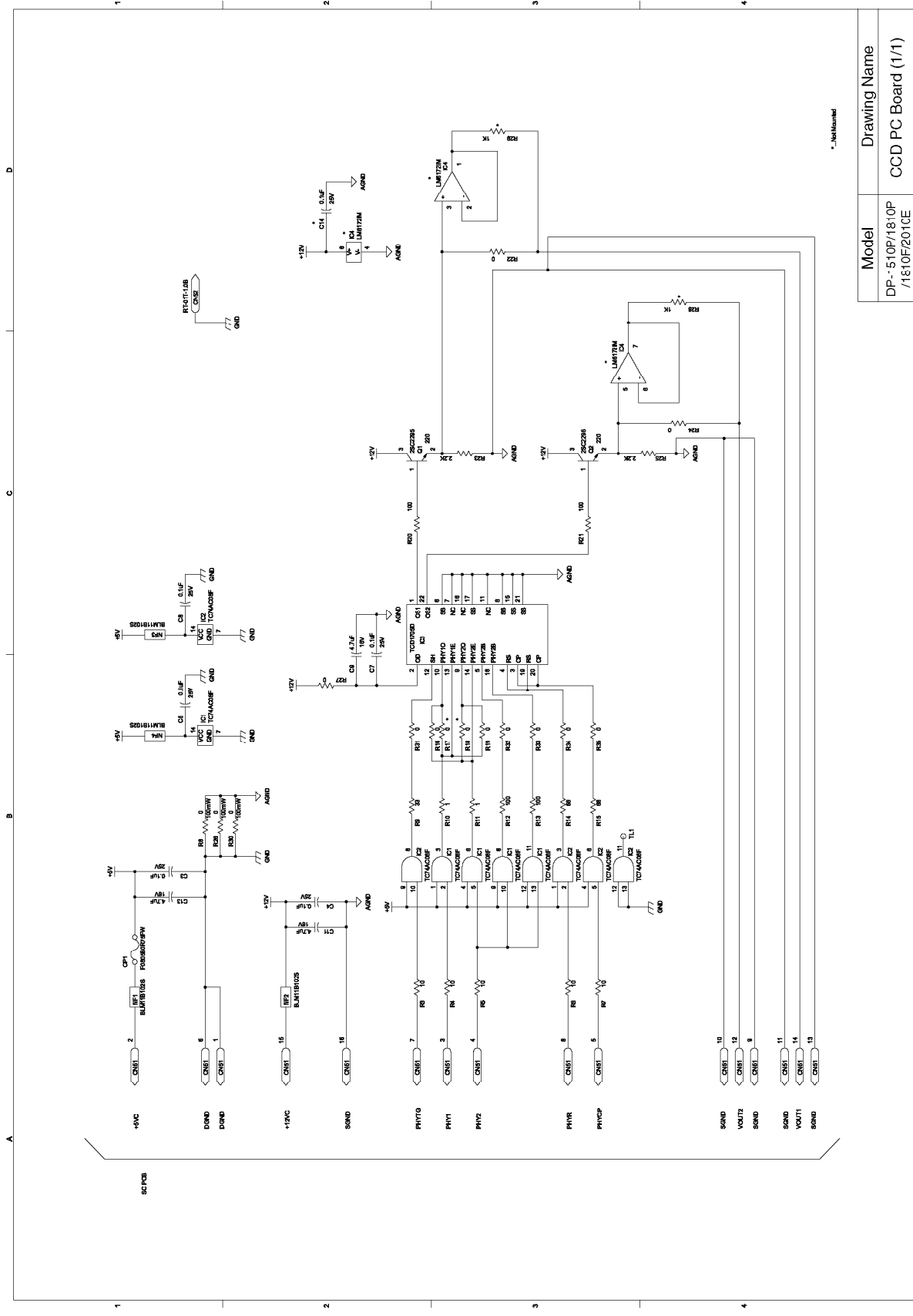
Model	Drawing Name
DP-1510P/1810P '1810F/2010E	LPC3 PC Board (7/7)

9.4. ADF PC Board



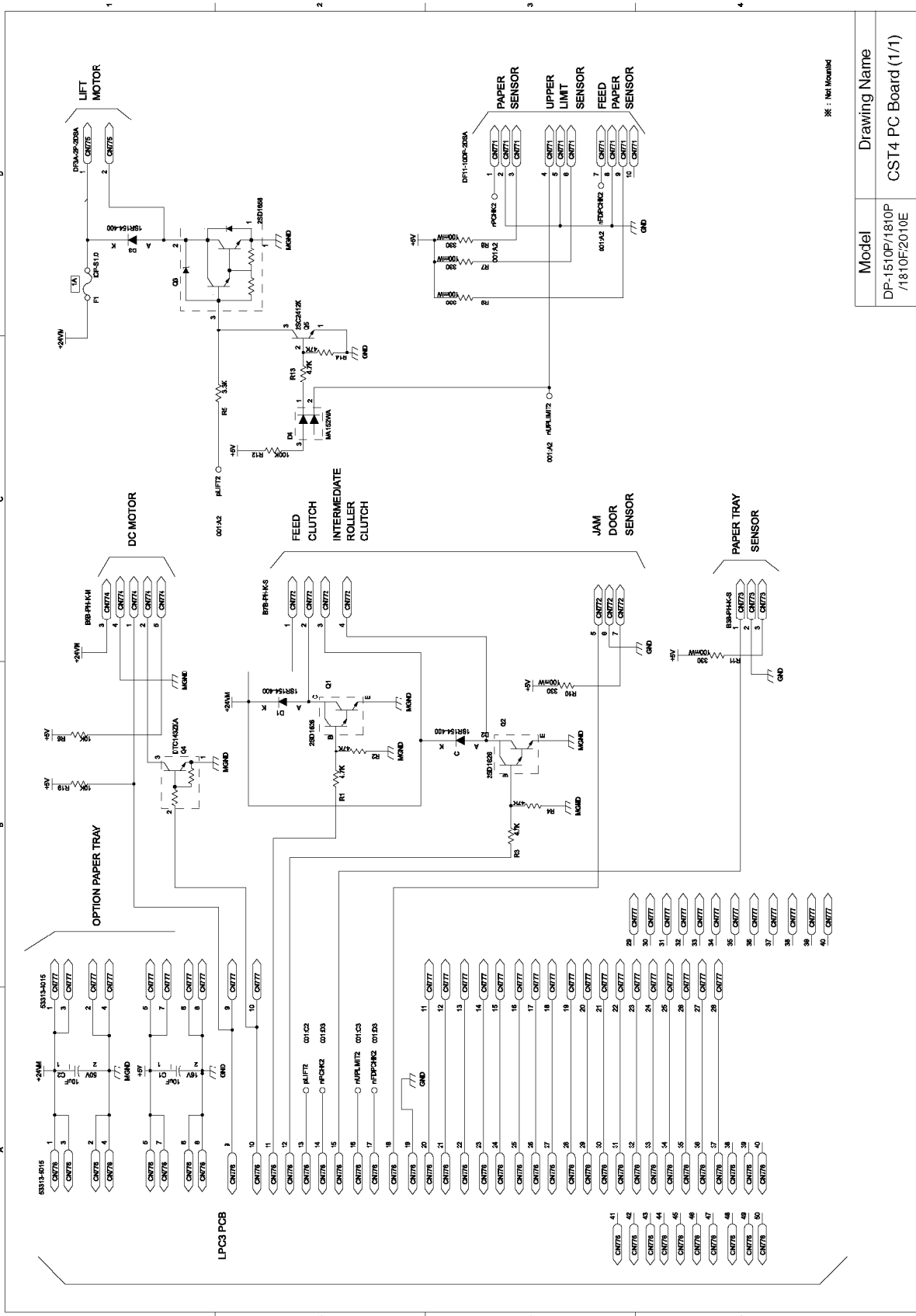
Model	Drawing Name
DP-1510P/1810P /1810F/2010E	ADF PC Board (1/2)



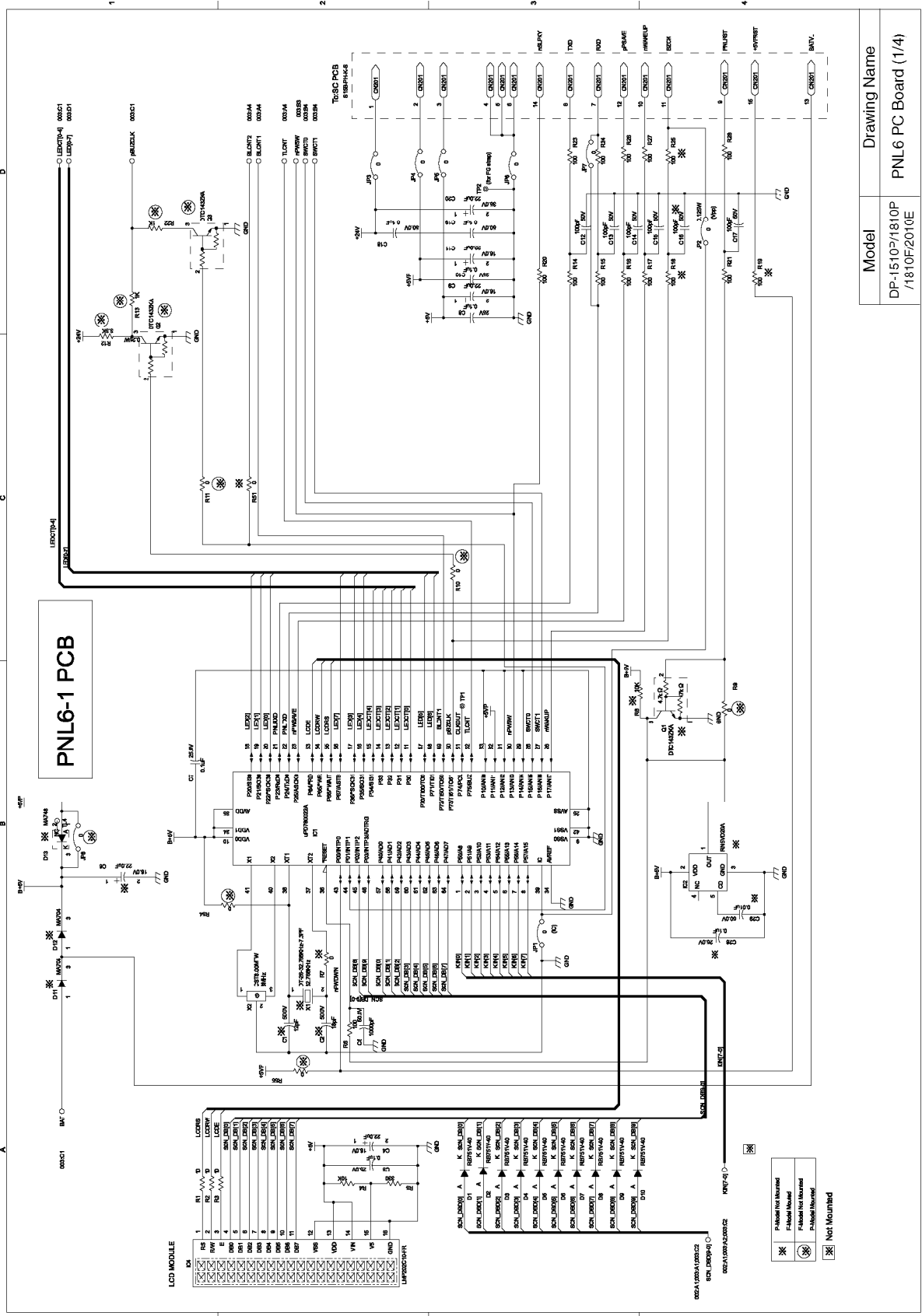


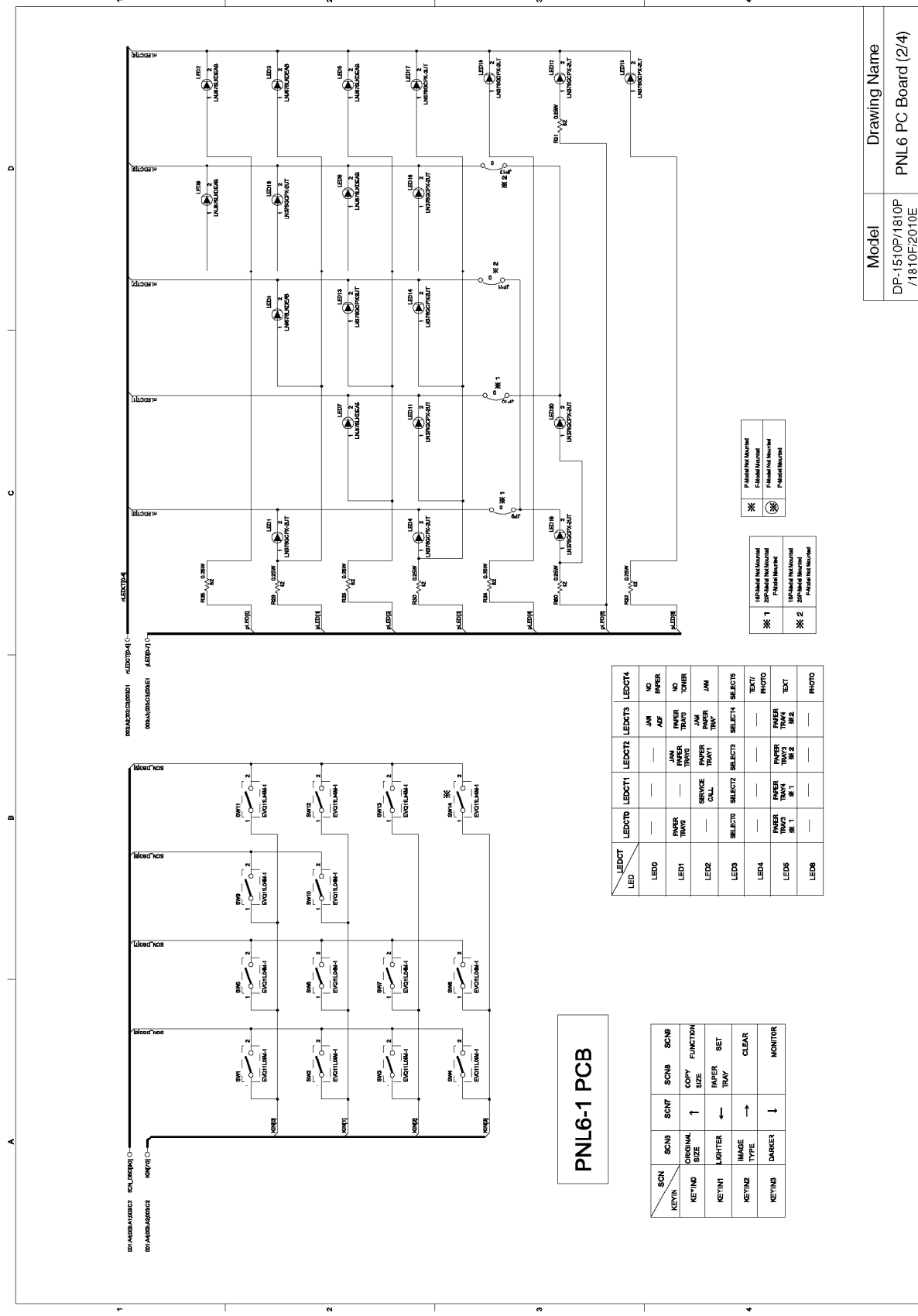


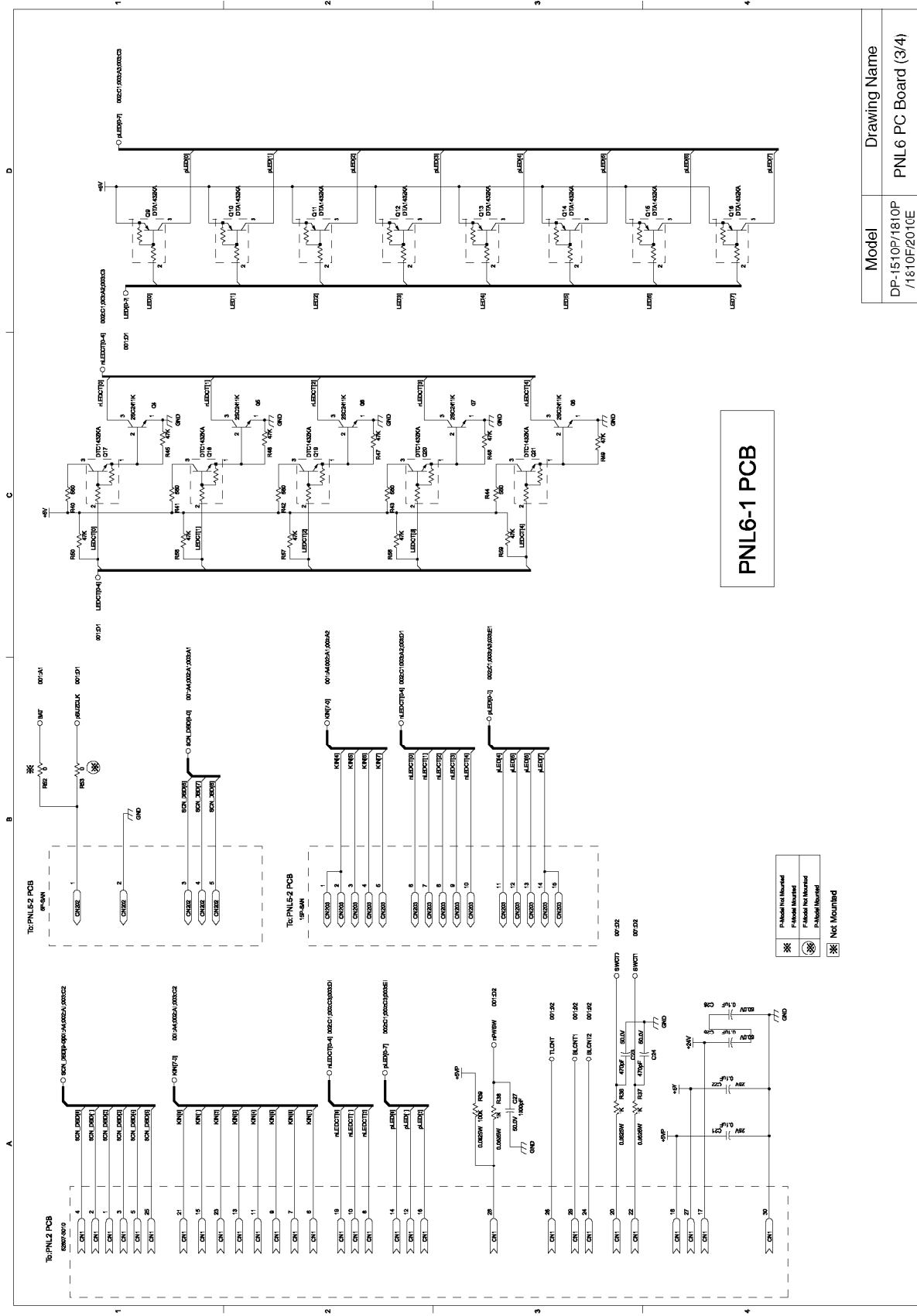
9.6. CST4 PC Board

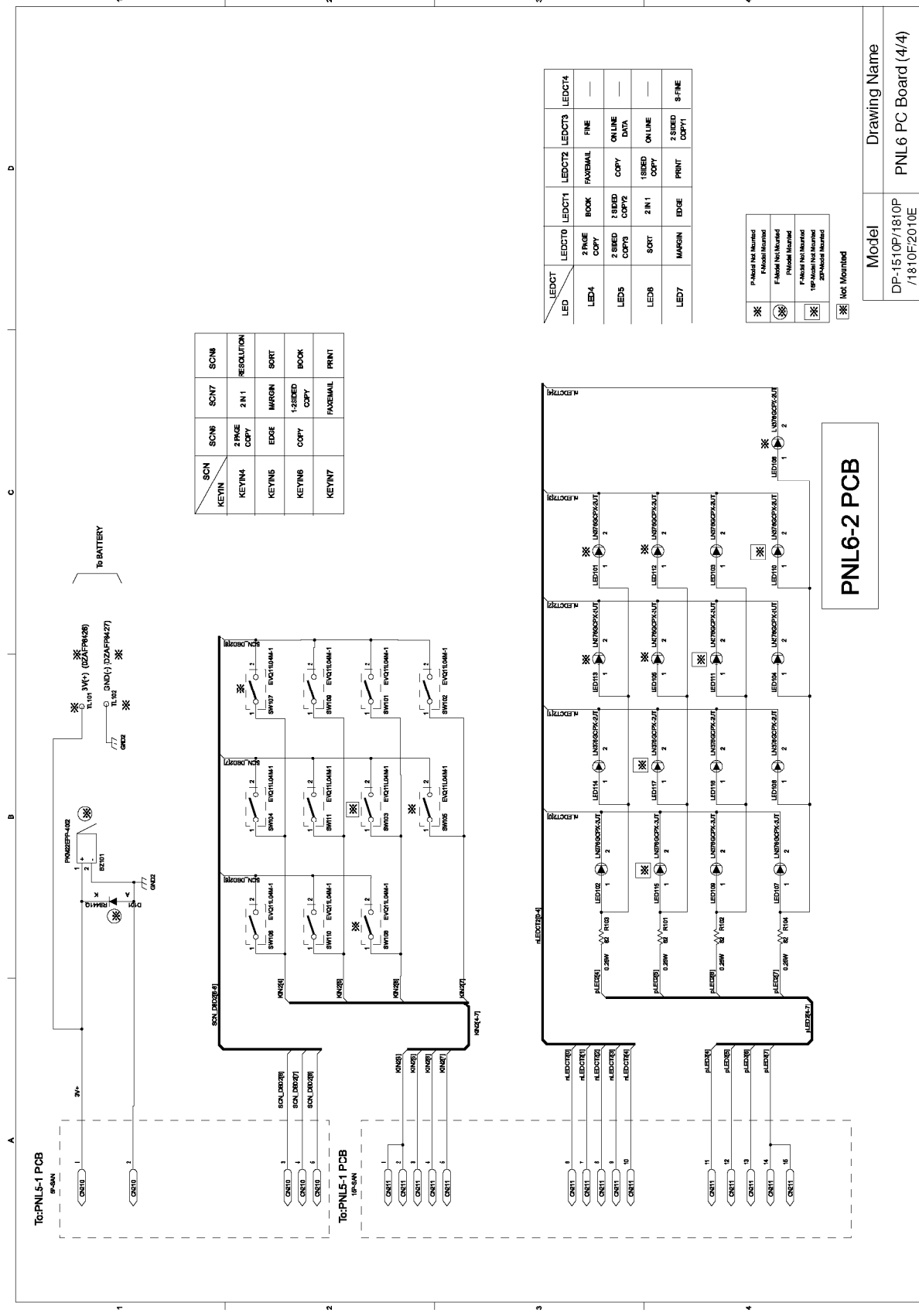


9.7. PNL6 PC Board

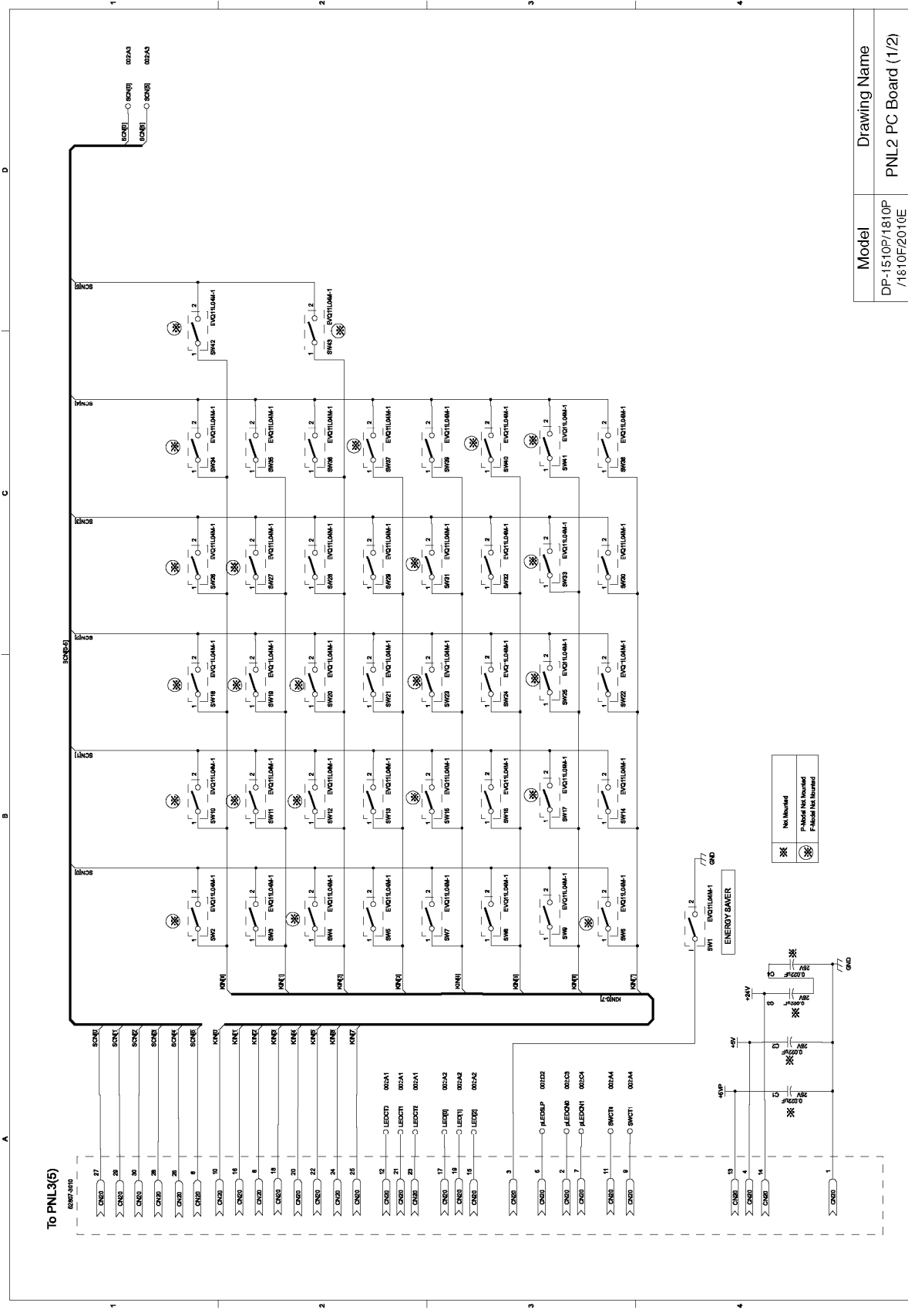








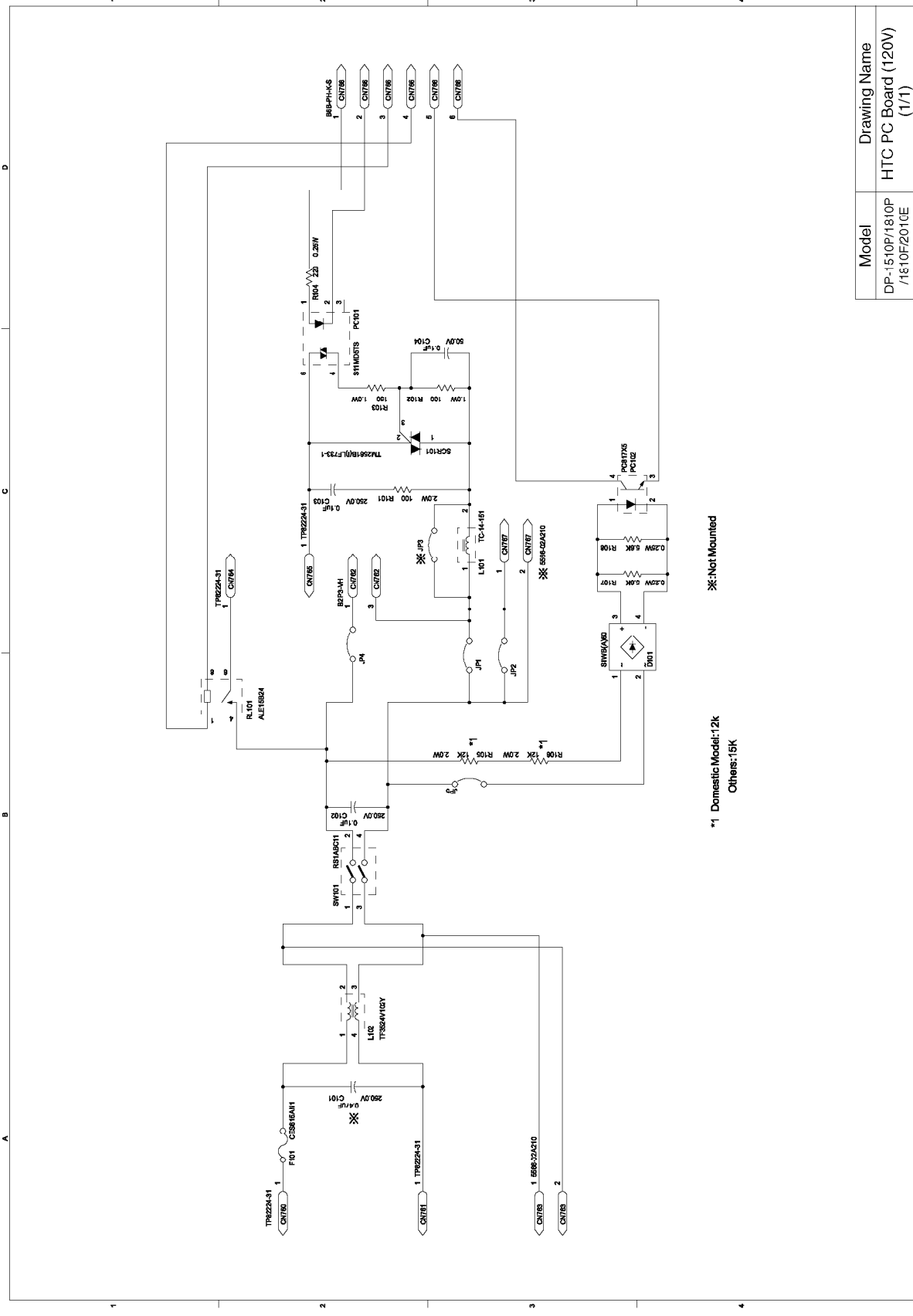
## 9.8. PNL2 PC Board



Model	Drawing Name
DP-1510P/1810P /1810F/2010E	PNL2 PC Board (1/2)



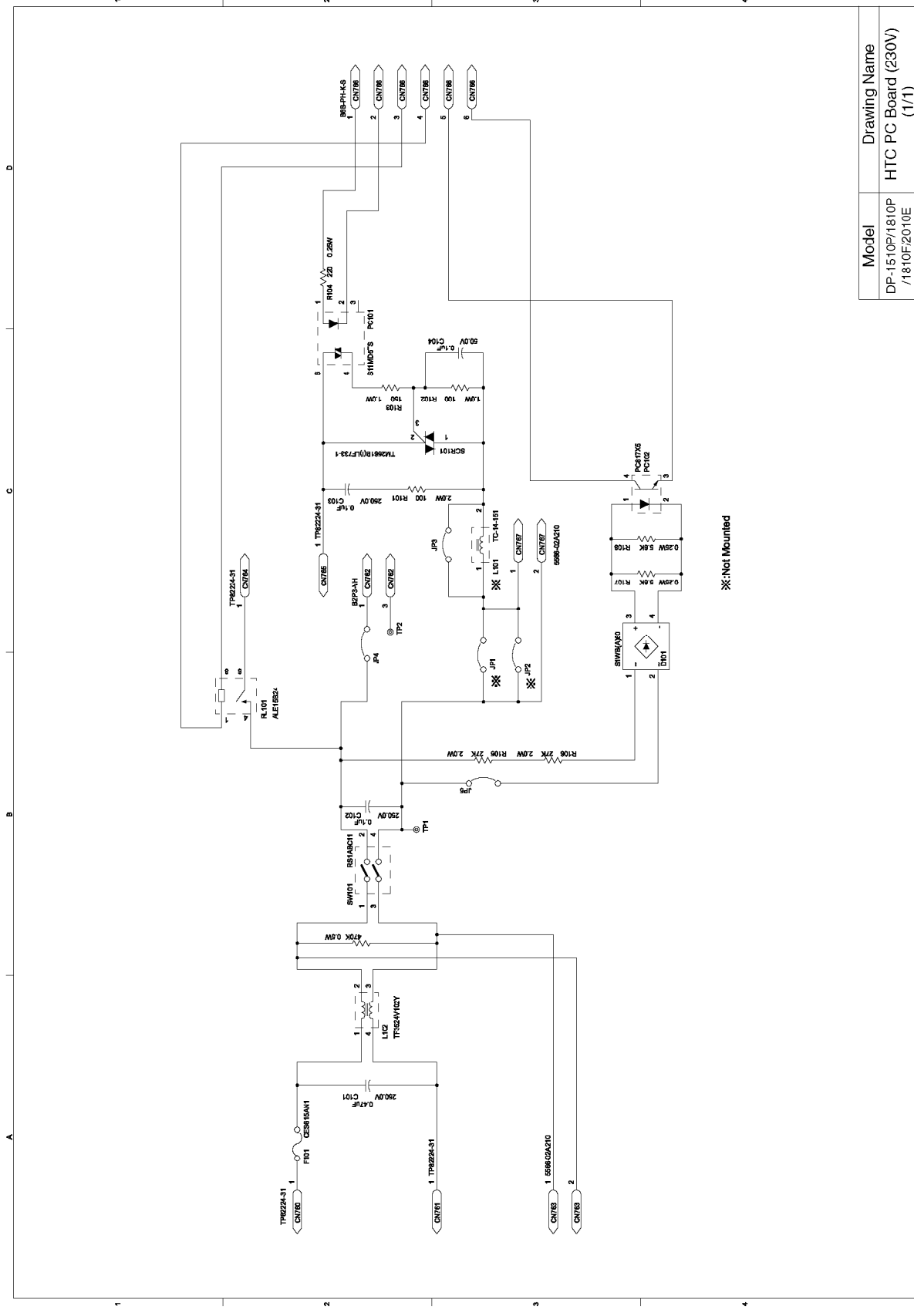
### 9.9. HTC PC Board (120V)



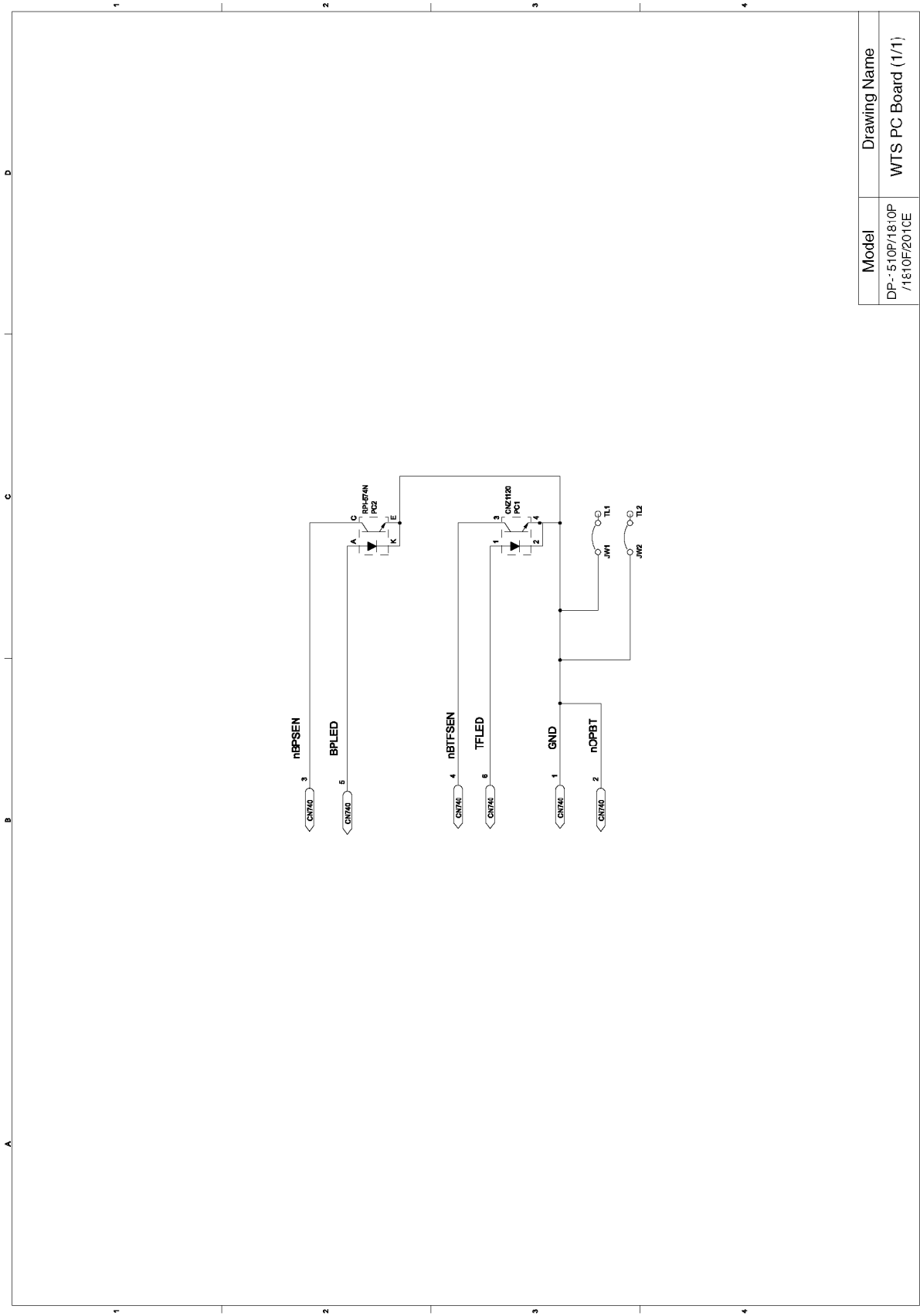
Model	Drawing Name
DP-1510P/1810P /1810F/201CE	HTC PC Board (120V) (1/1)



### 9.10. HTC PC Board (230V)

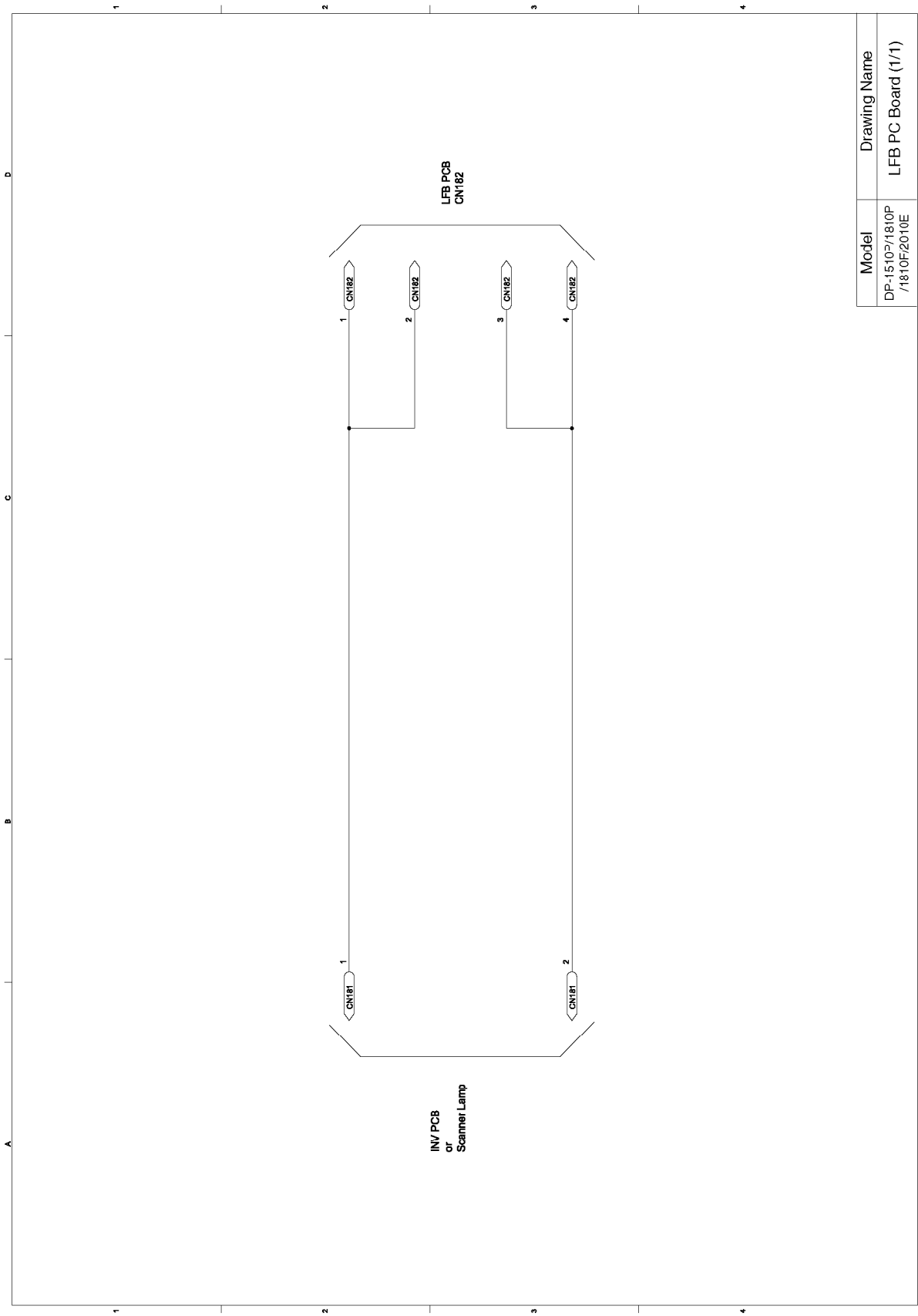


9.11. WTS PC Board

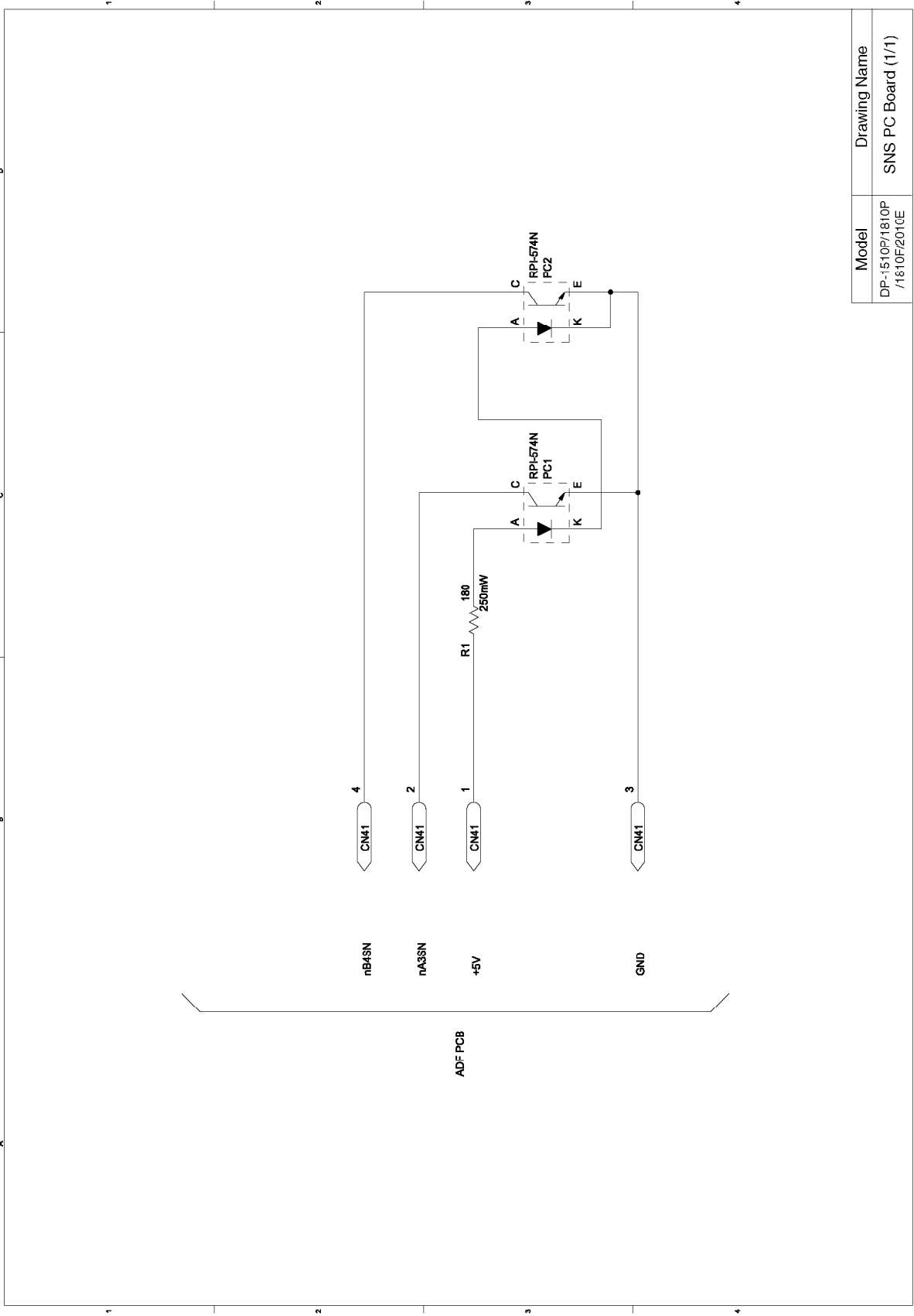


Model	Drawing Name
DF-1510P/1810P /1810F/2010E	WTS PC Board (1/1)

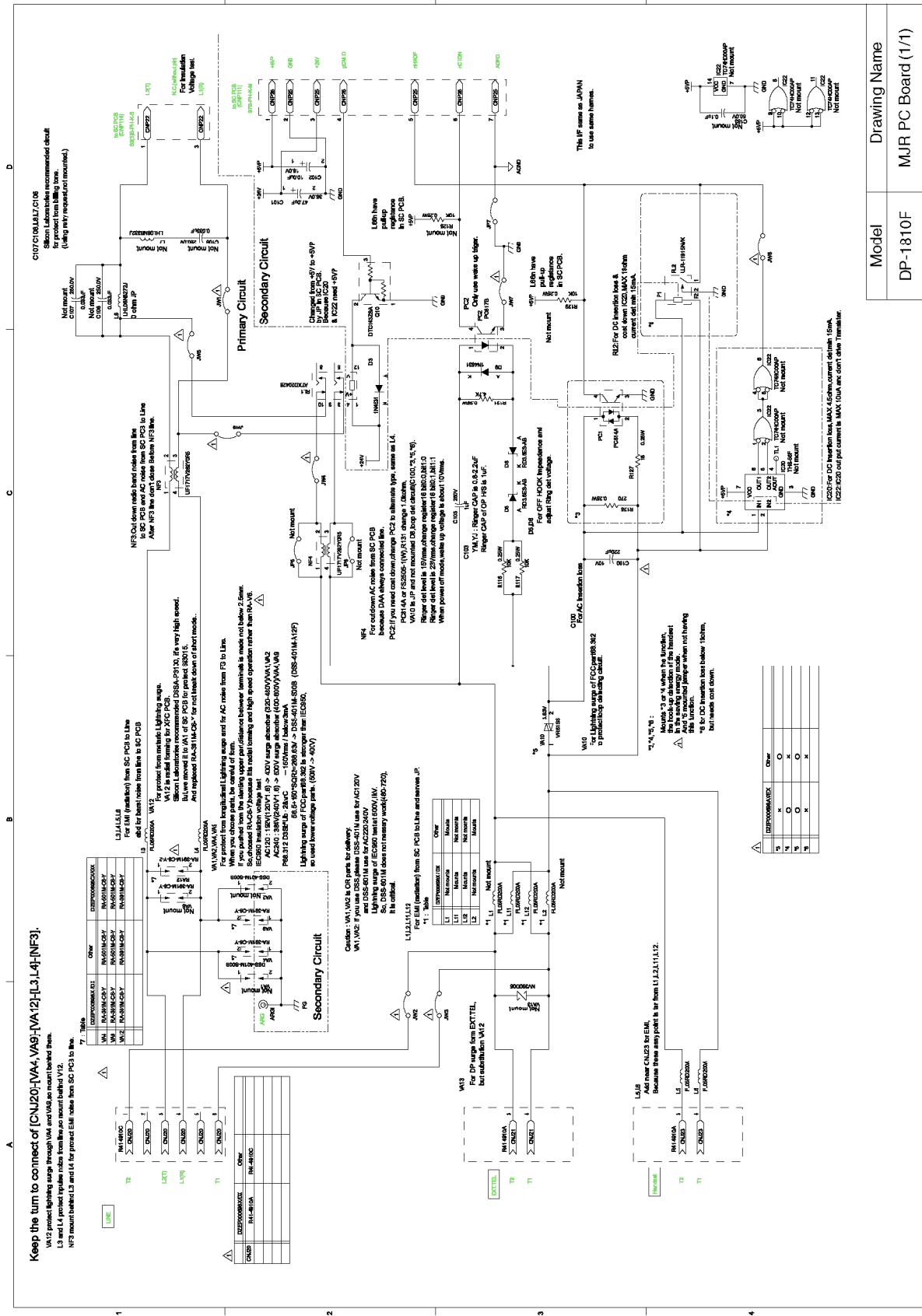
9.12. LFB PC Board



9.13. SNS PC Board

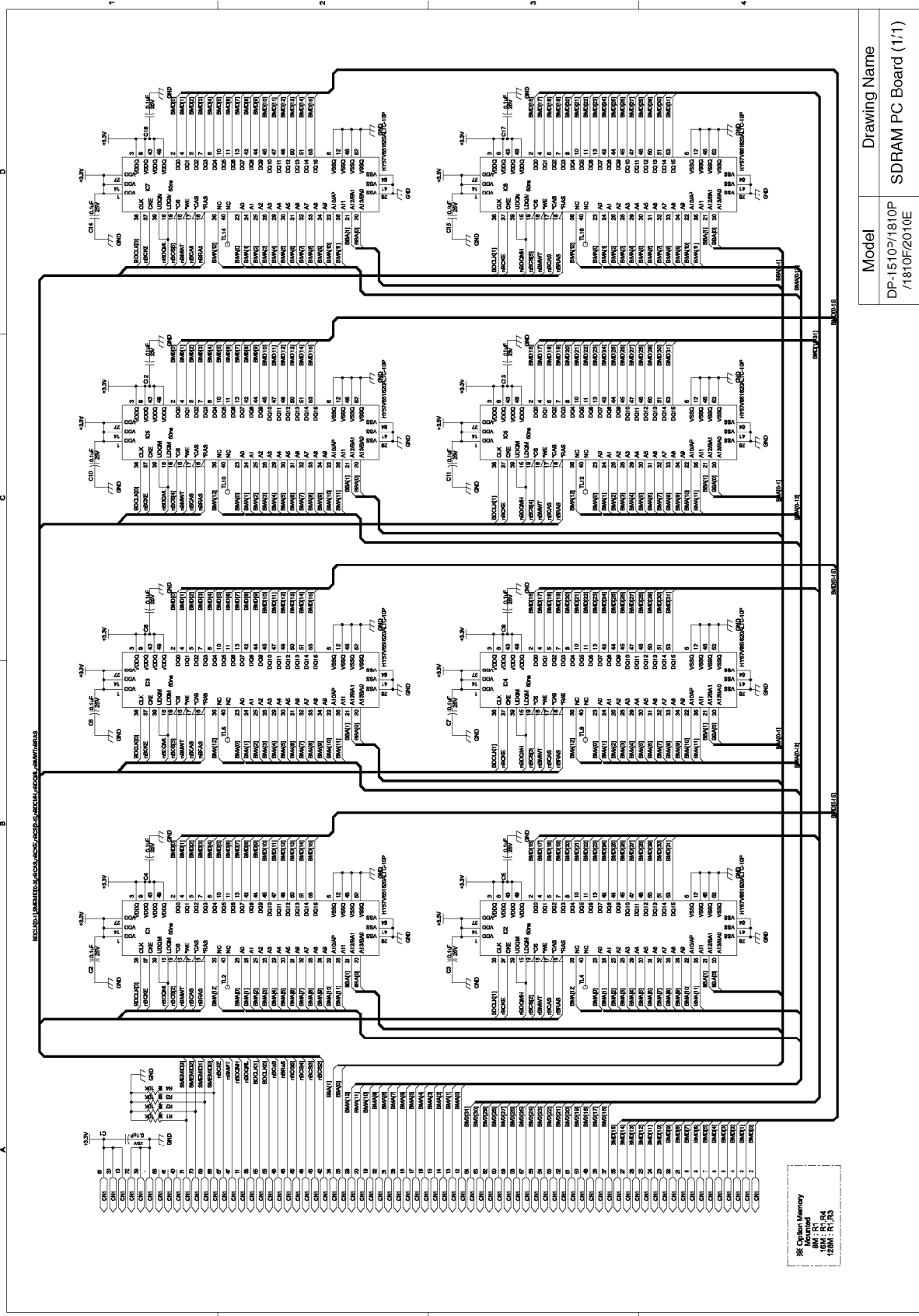


#### 9.14. MJR PC Board (For DP-1810F Only)



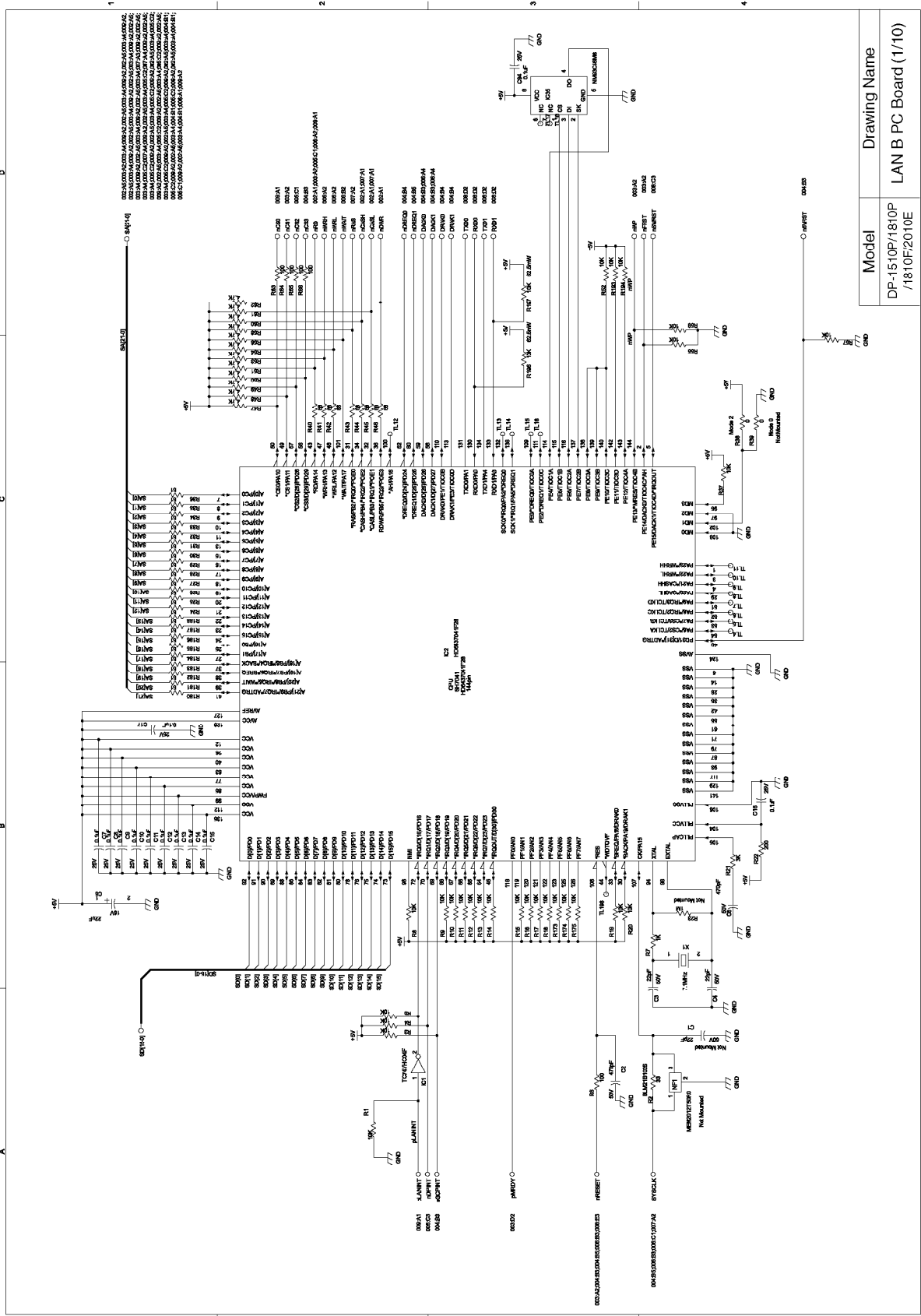
9.15. SDRM PC Board

DP-1510P/1810P  
/1810F/2010E

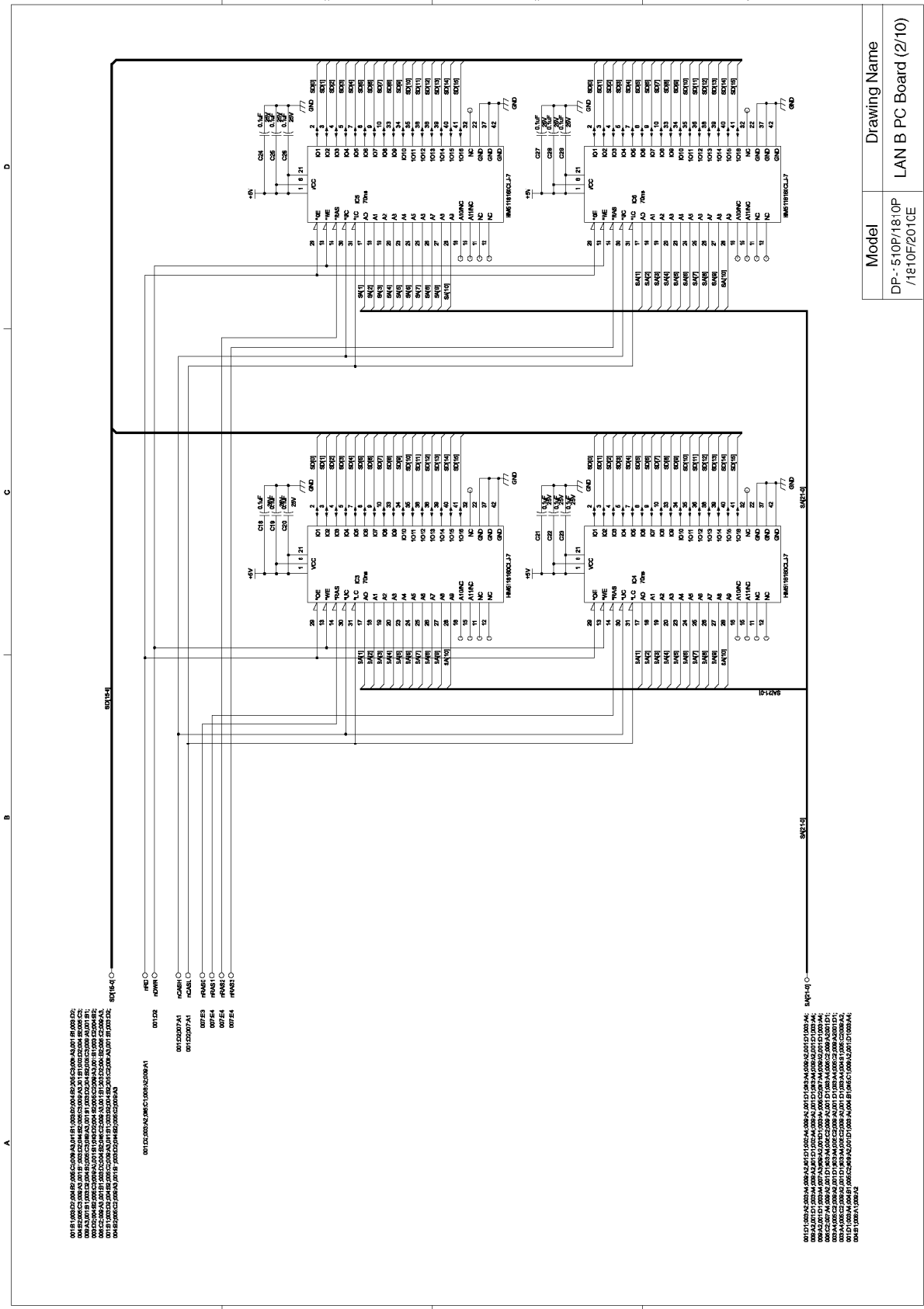


Model	Drawing Name
DP-1510P/1810P /1810F/2010E	SDRAM PC Board (1/1)

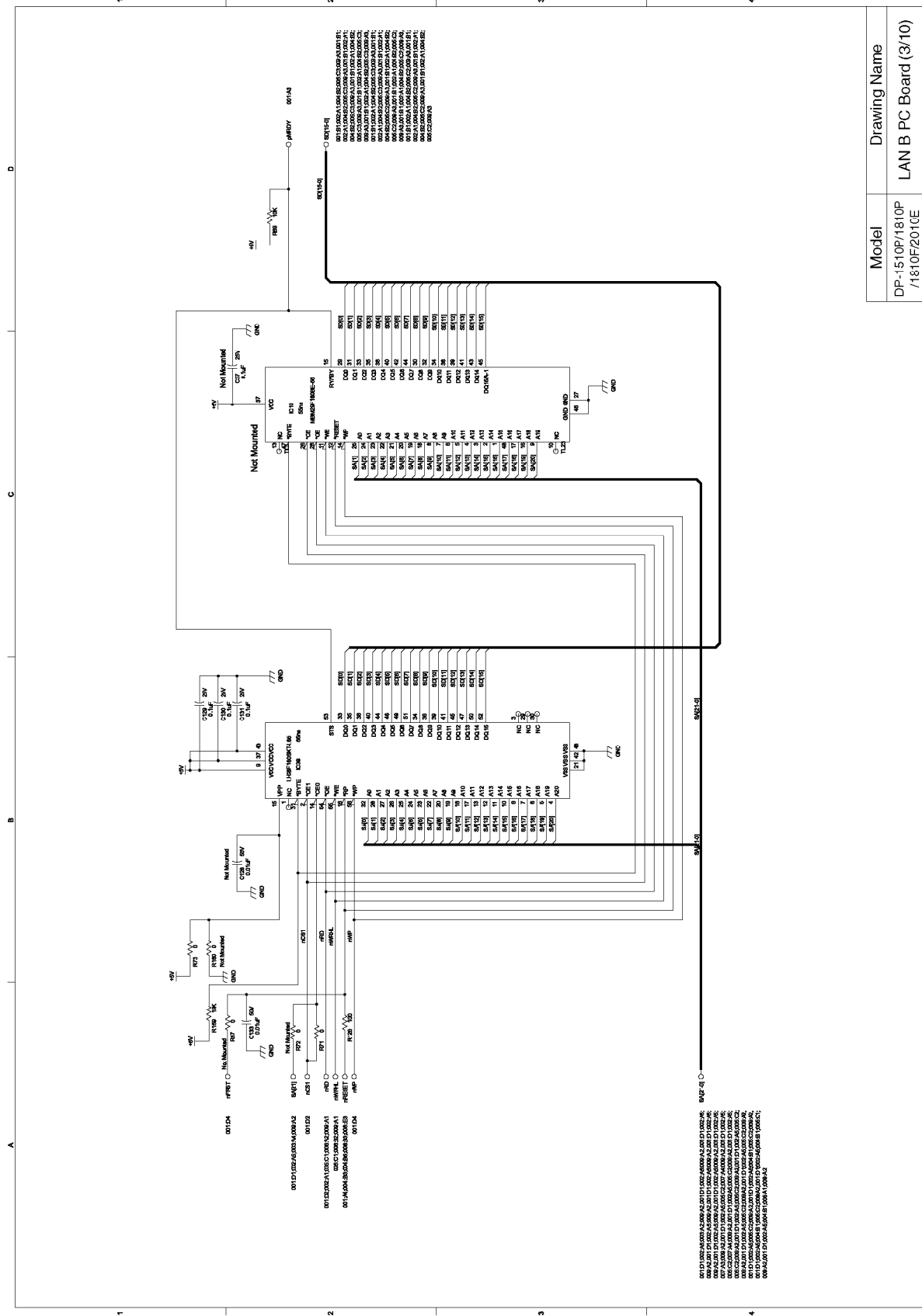
9.16. LANB PC Board

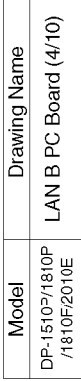


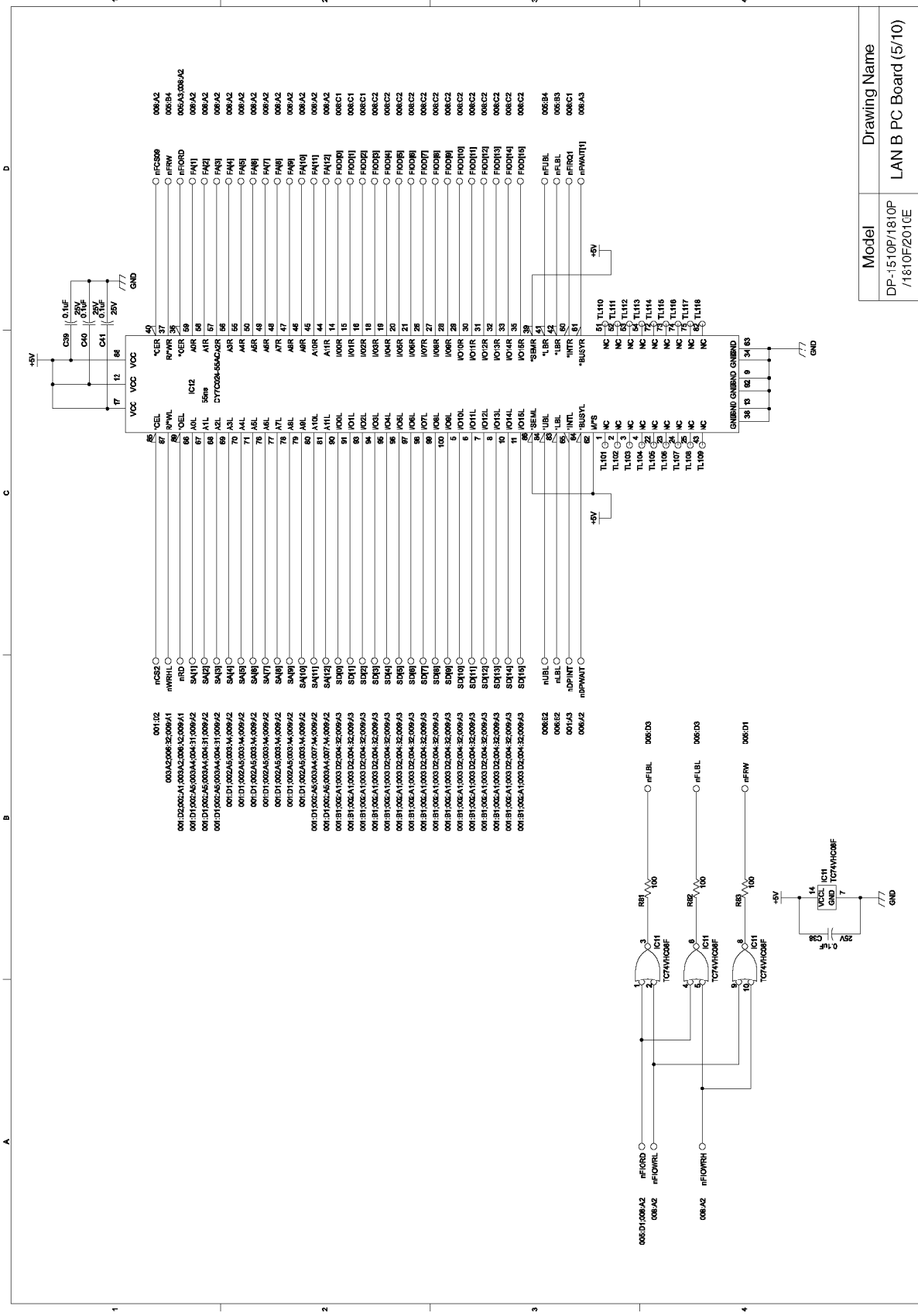
Model	Drawing Name
DP-1510P/1810P '1810F/2010E	LAN B PC Board (1/10)



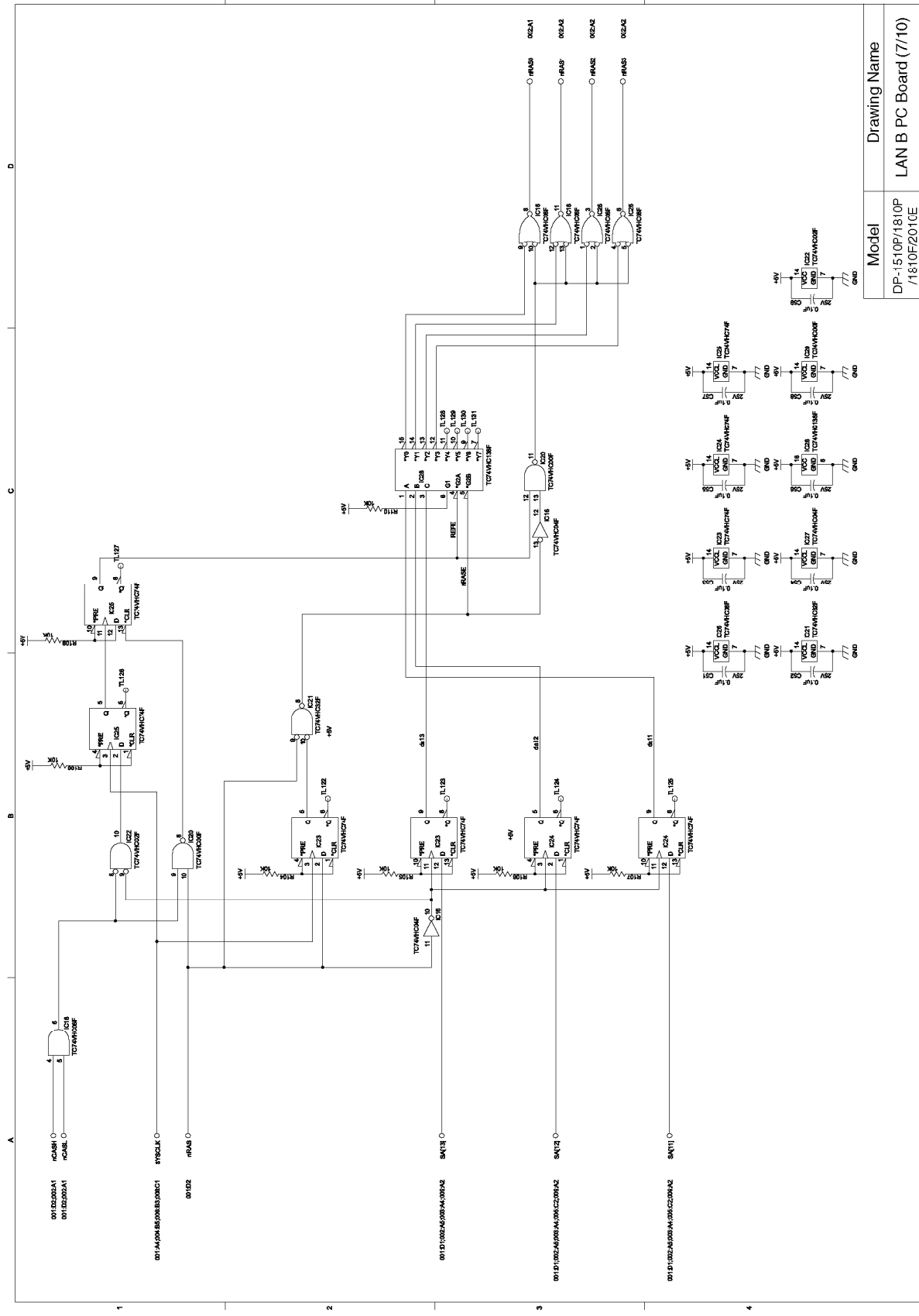


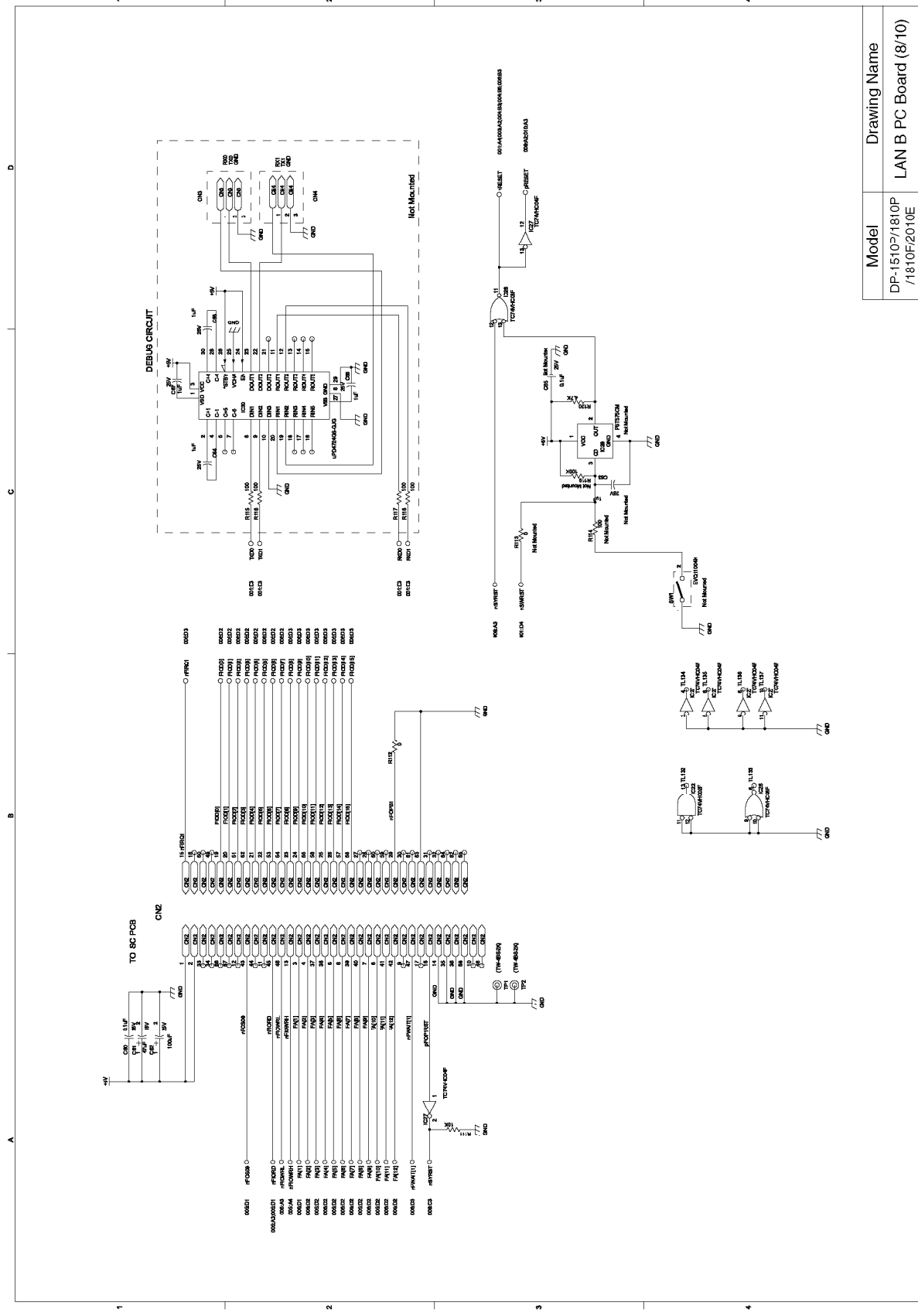


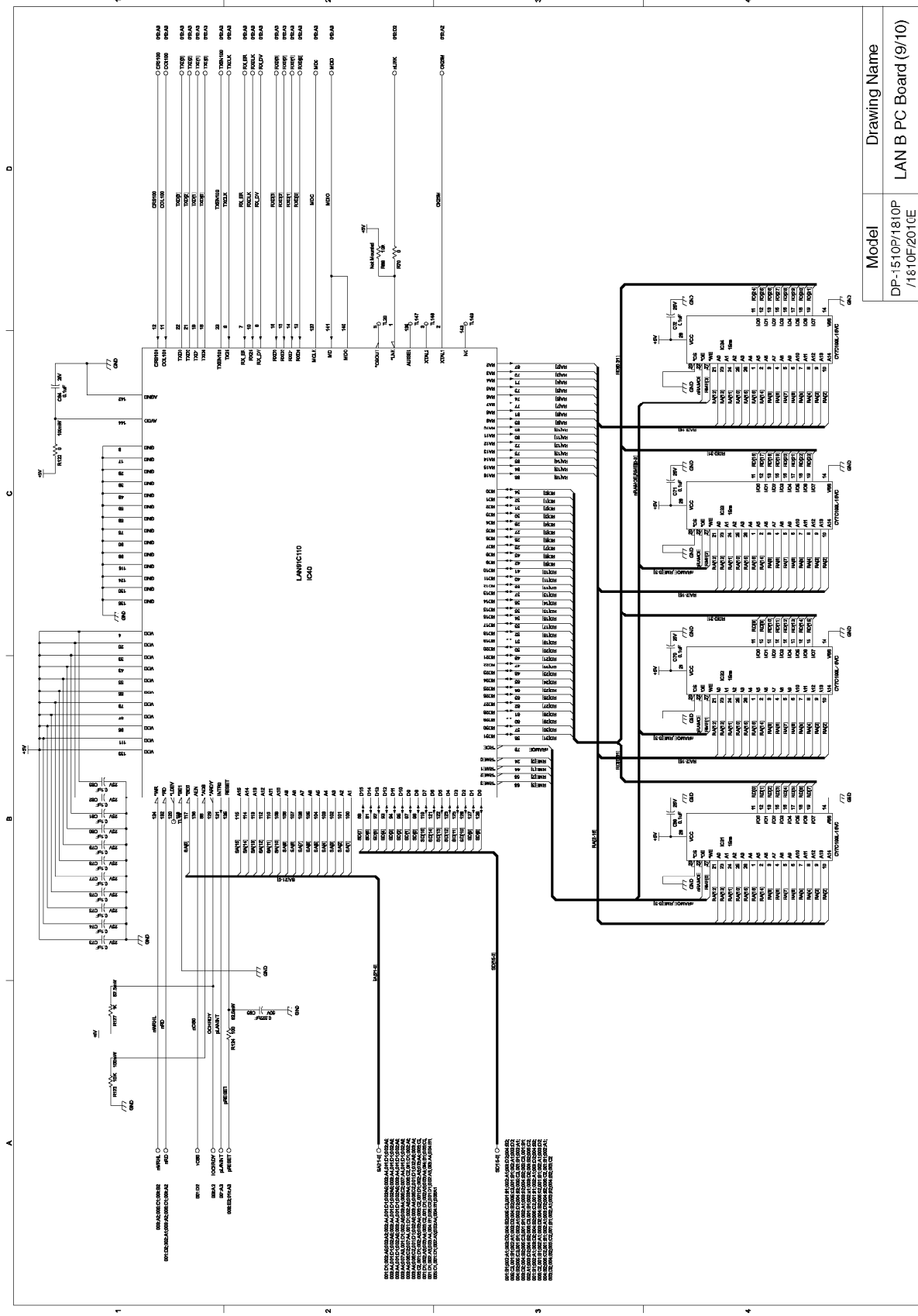


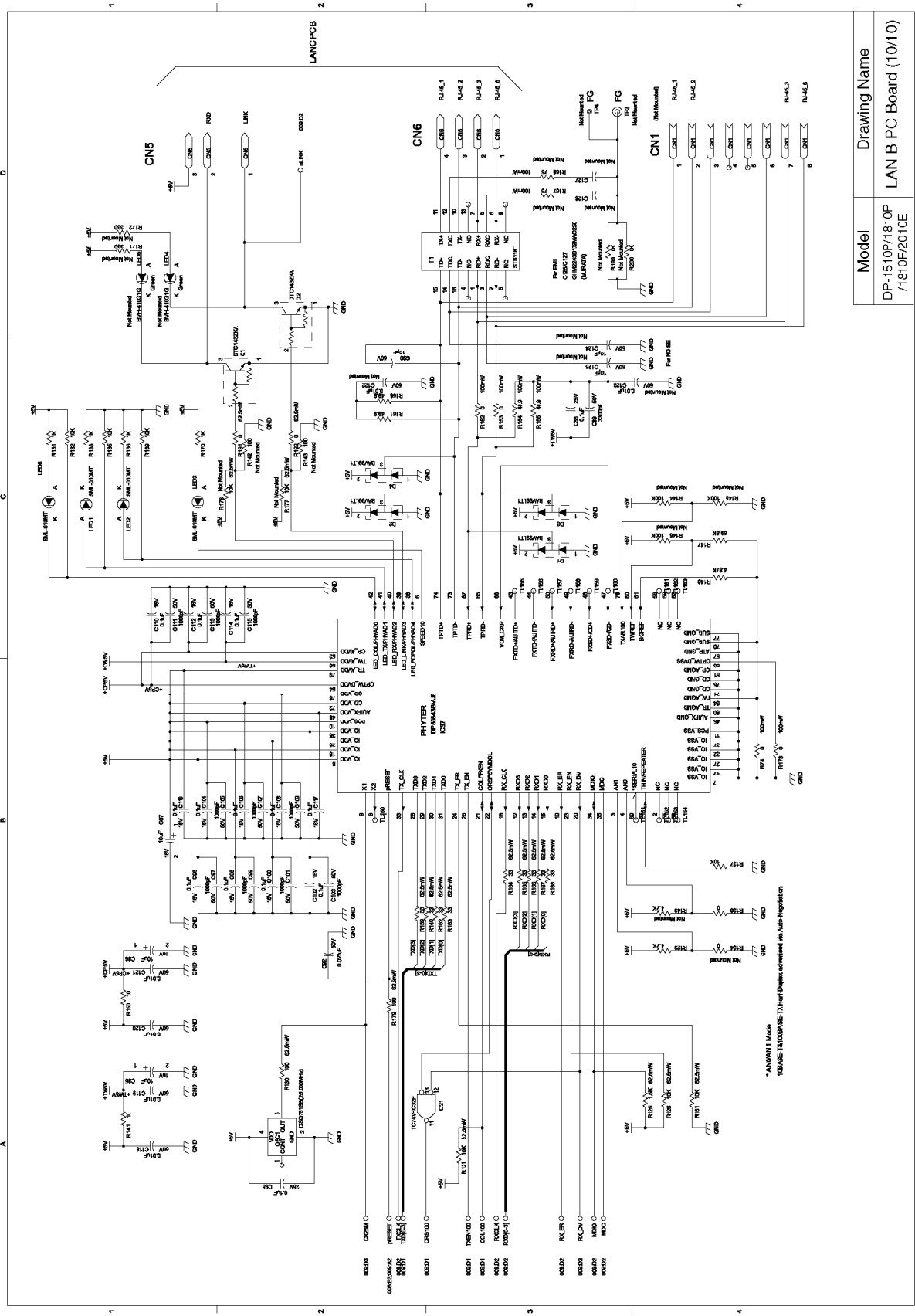






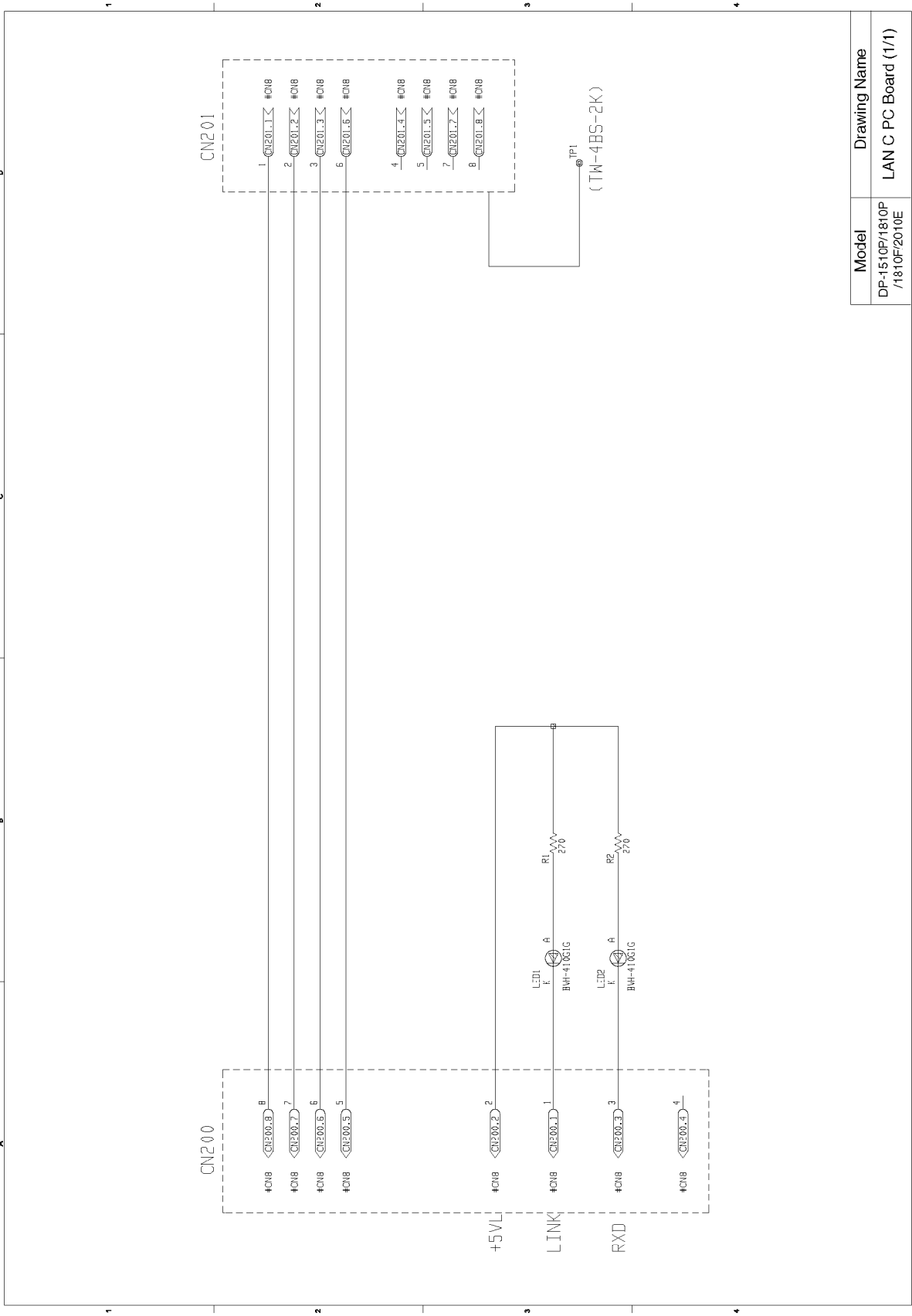






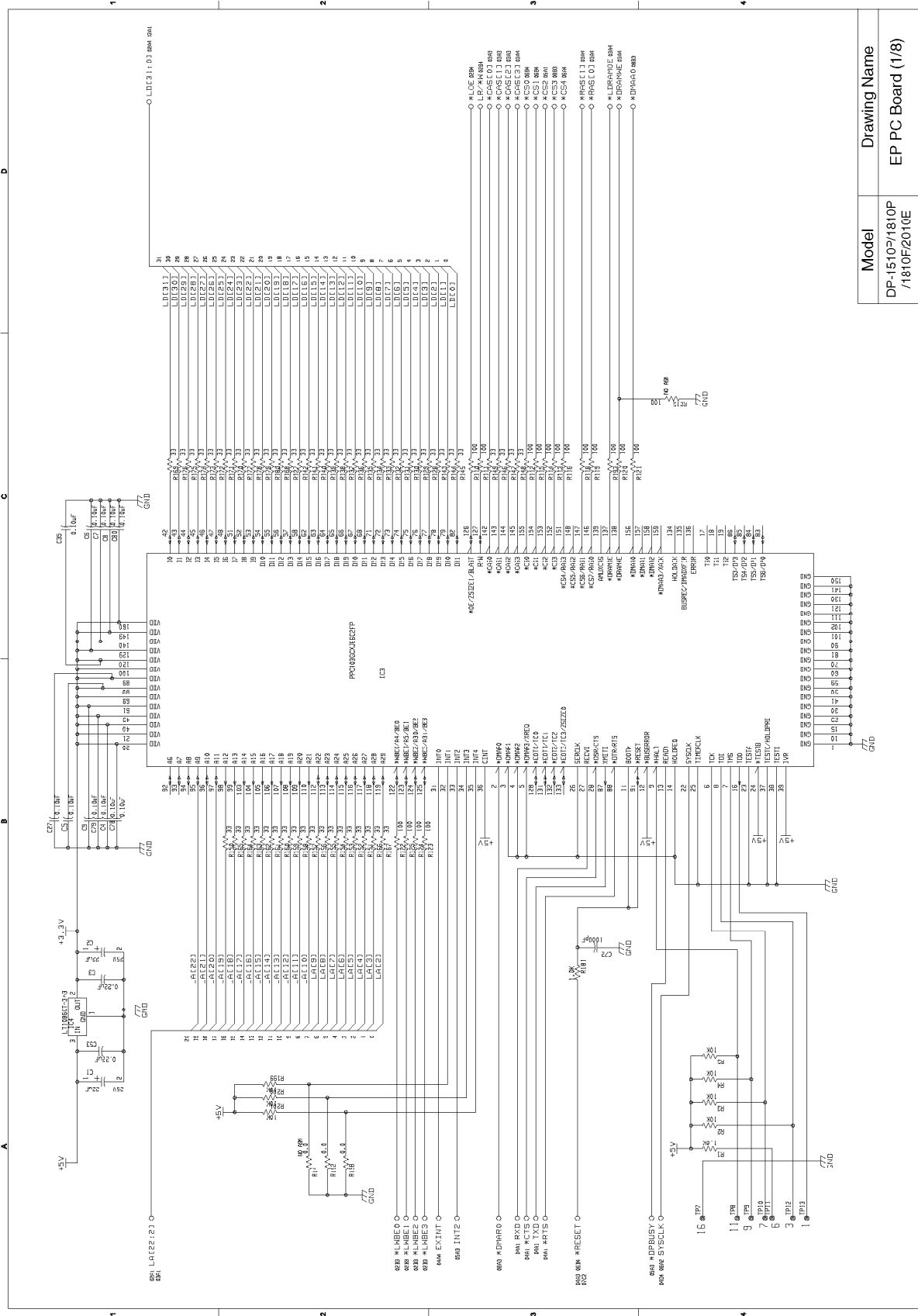


9.17. LANC PC Board

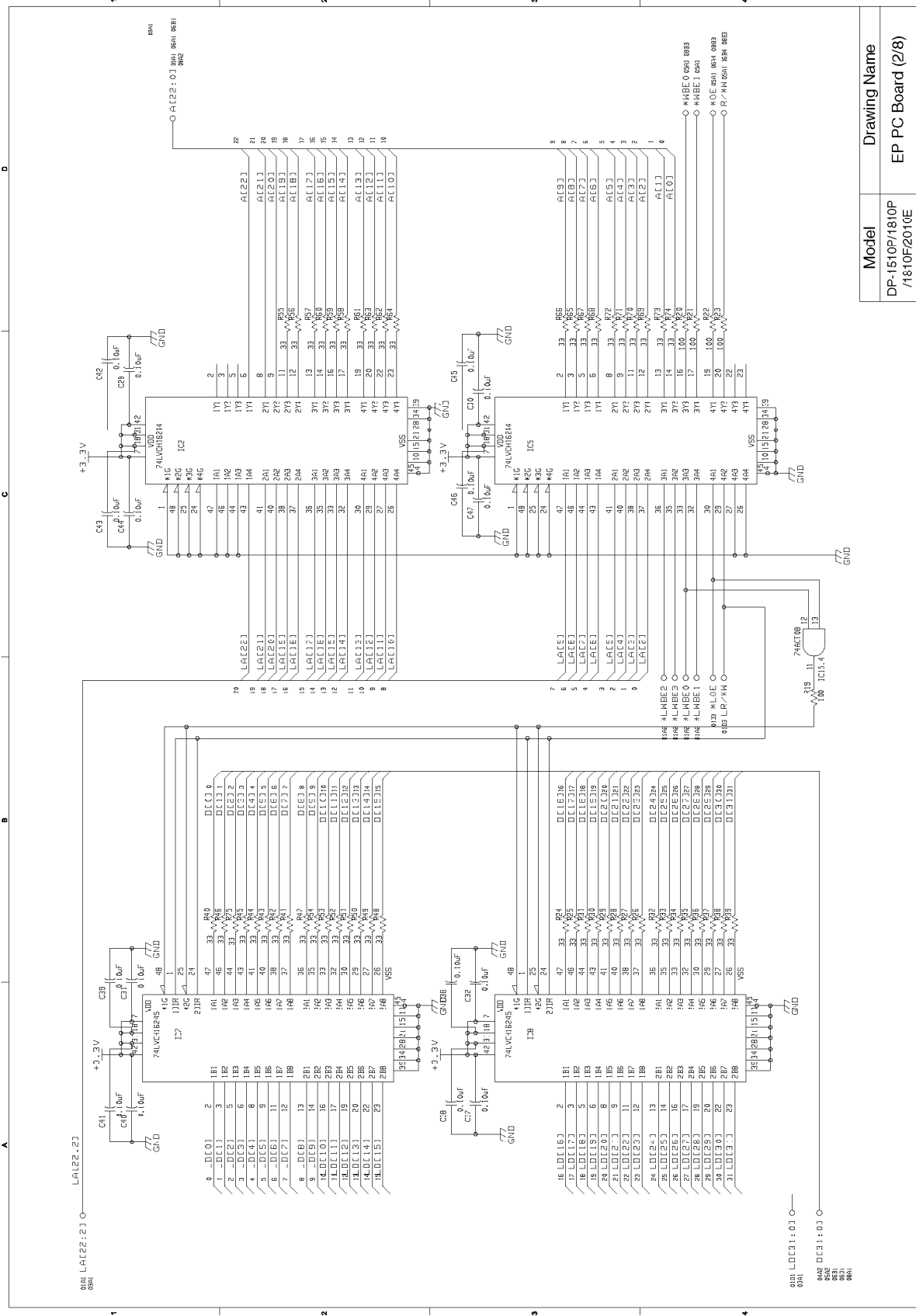


# 9.18. EP PC Board

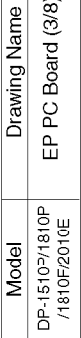
DP-1510P/1810P  
/1810F/2010E

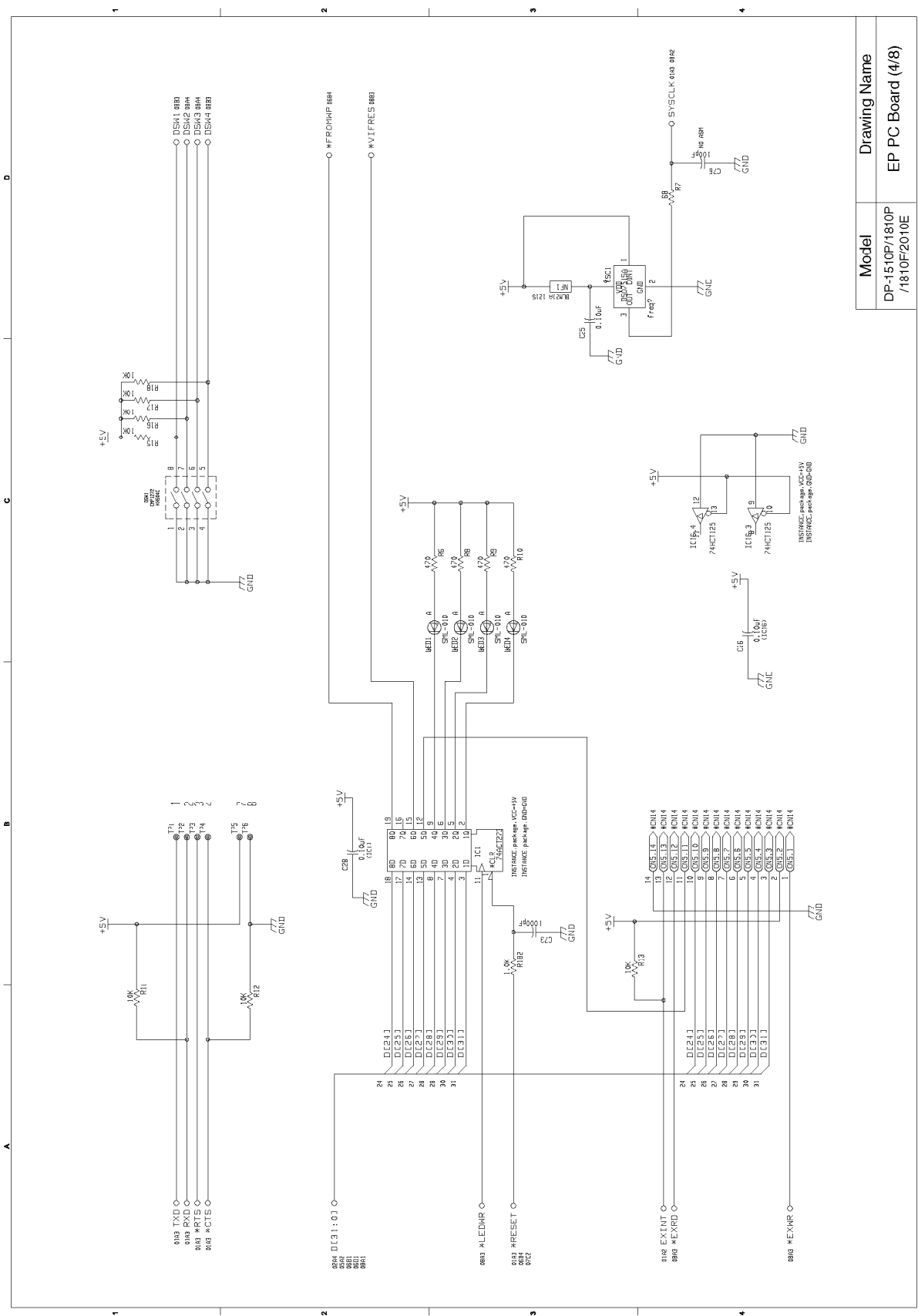


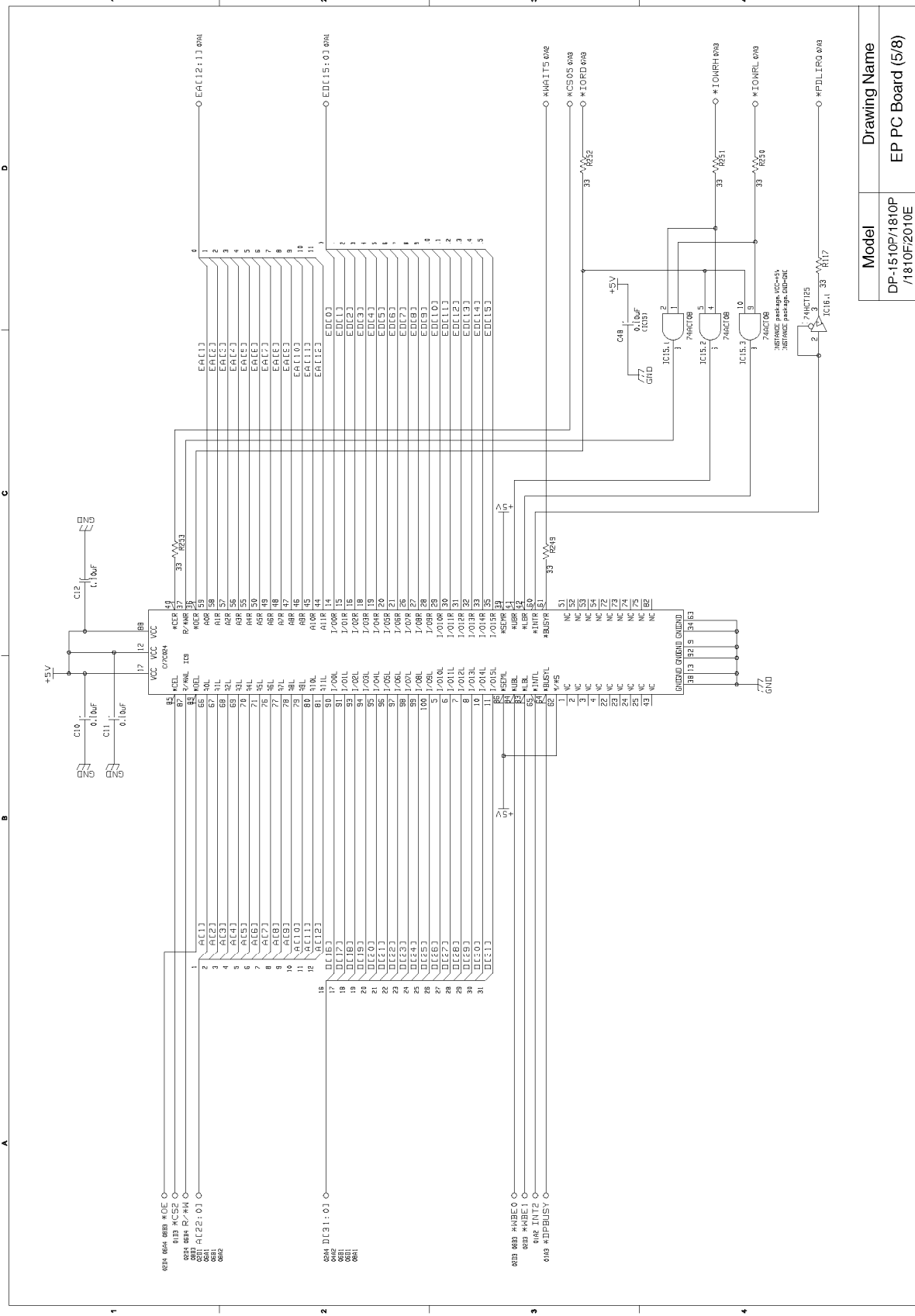
Model	Drawing Name
DP-1510P/1810P /1810F/2010E	EP PC Board (1/8)



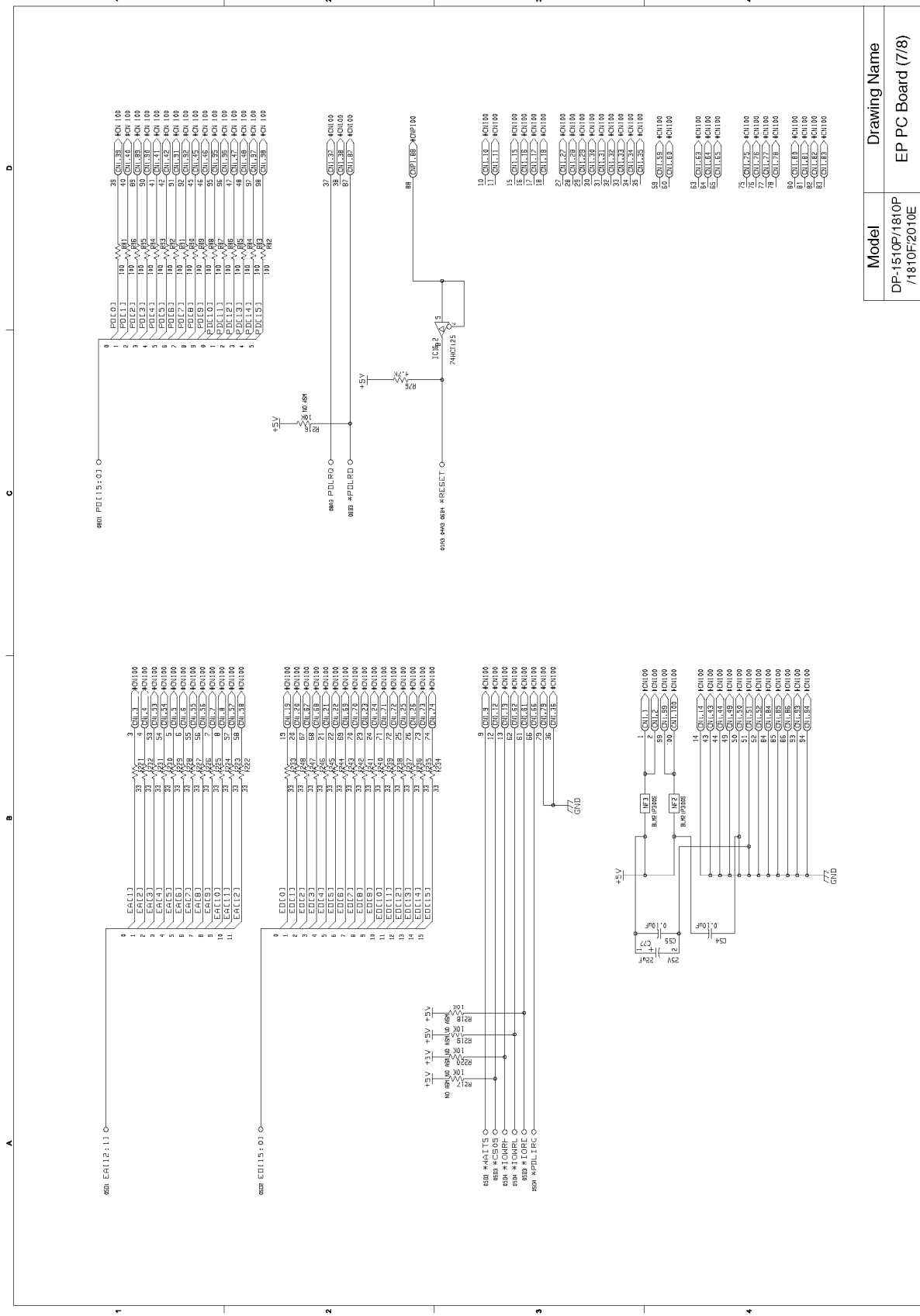
Model	Drawing Name
DP-150P/1810P /1810F/2010E	EP PC Board (2/8)



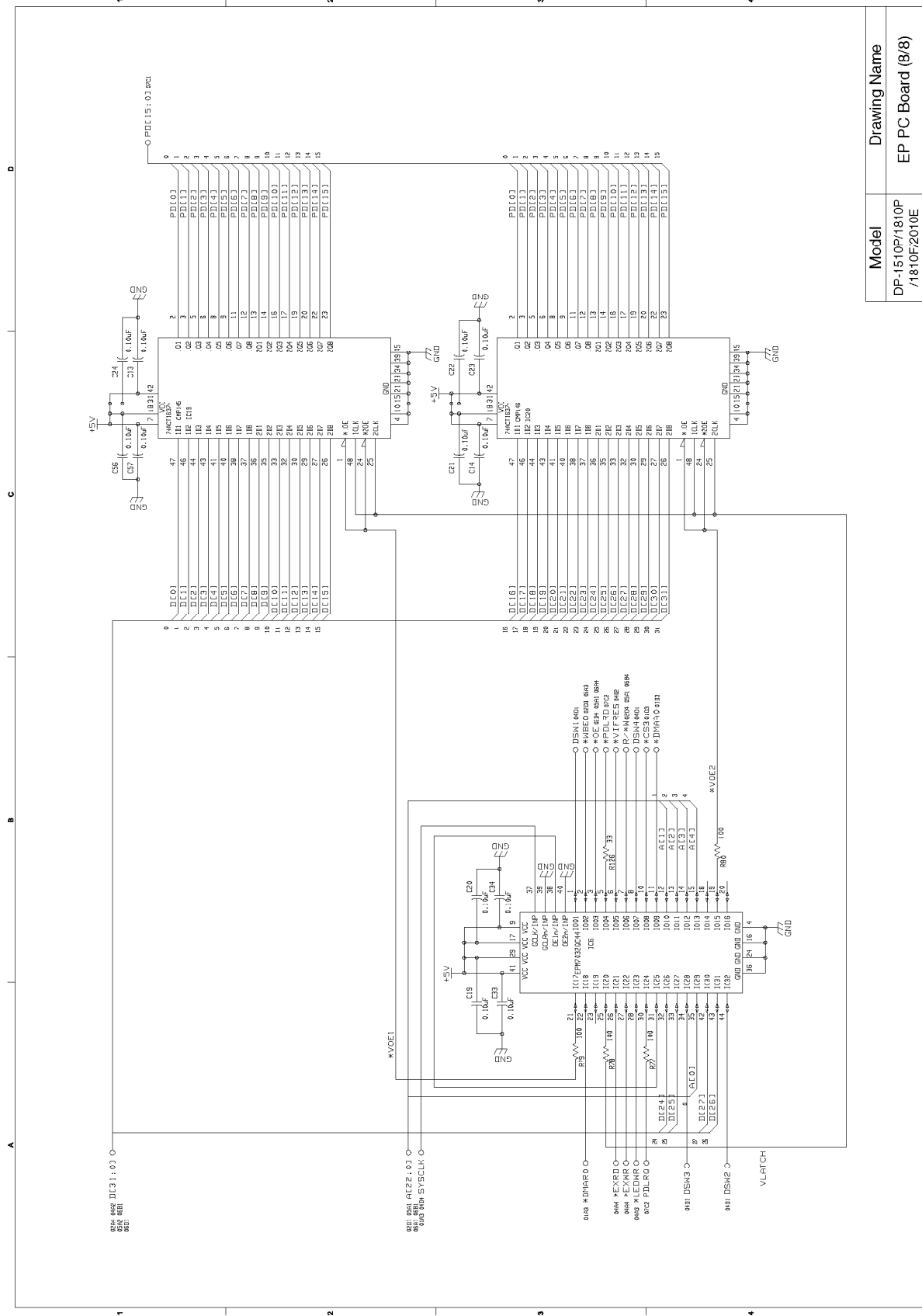




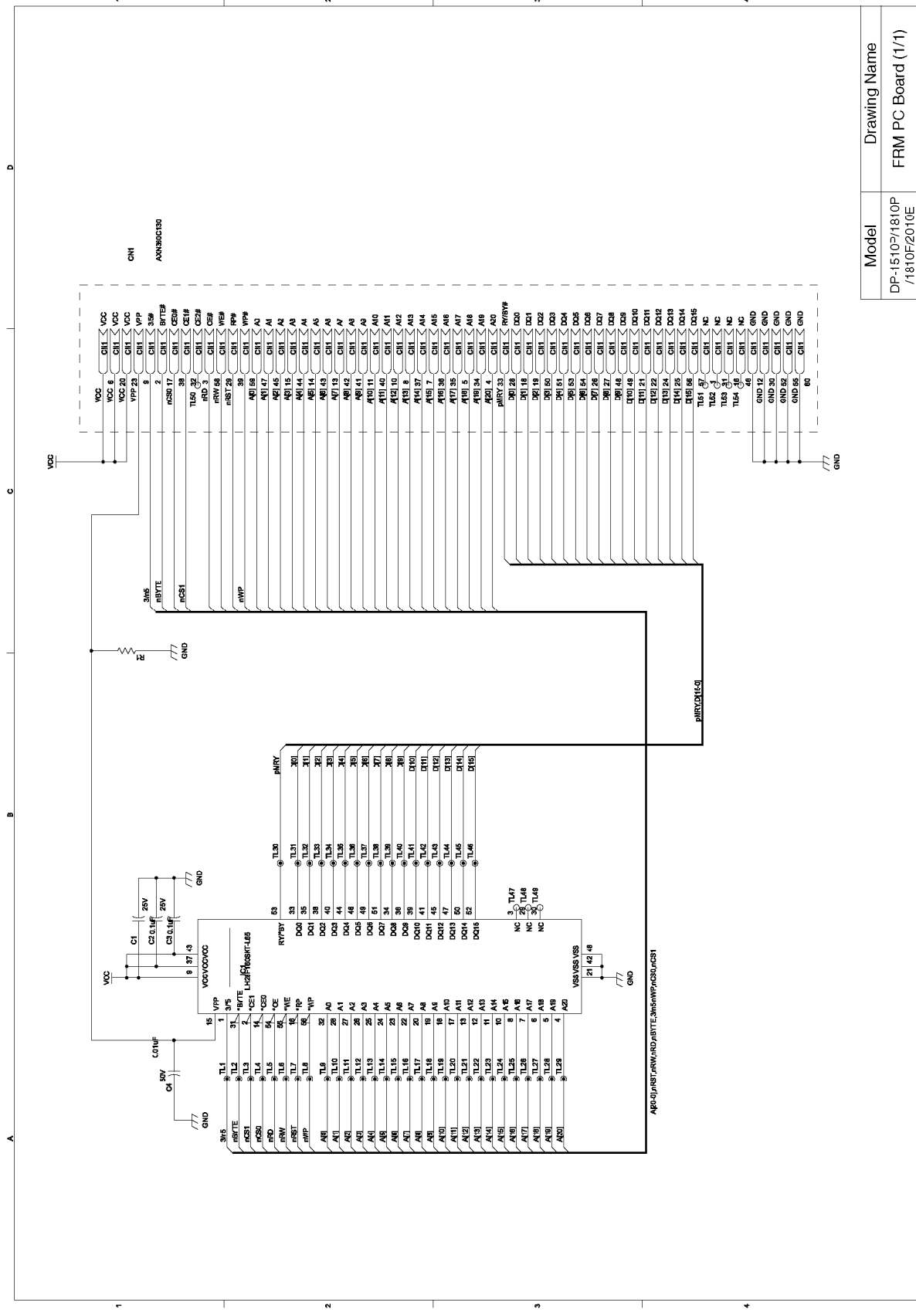








Model	Drawing Name
DP-1510P/1810P /1810F/2010E	EP PC Board (8/8)



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